The role of time and space on the interaction between persons with serious mental illness and the police: A mixed methods study

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Abstract

A sizable amount of research and governmental reports have been produced over the past several decades on police calls-for-service involving persons with severe mental illness (PwSMI). However, the narrative of these papers often has a narrow focus (e.g., small subgroups of high-risk offenders), which can result in difficulties for researchers and administrators to generalize their findings to other settings. Extending the existing knowledge-base to the population-level is likely to produce a more accurate understanding of the true nature of the intersection between police services and PwSMI. Through a mixed methods research design, the overall aim of this dissertation is to identify the pertinent static and dynamic factors that are associated with a variety of police contacts with the population of PwSMI. The first research study uses qualitative interviews and focus groups with a purposive sample of police officers from the Lower Mainland of British Columbia to explore factors associated with police interactions with PwSMI, along with decision-making practices. Results from this foundational study suggest that there may be underlying spatial and temporal factors that are related to calls-for-service with PwSMI. As a result, the second study explores the relationship between the environment and police calls-for-service with emotionally disturbed persons (EDP), a proxy for PwSMI. Results suggest that the majority of EDP-events fall under the British Columbia *Mental Health Act* (MHA), and that there are significant differences between where men and women have contact with police at the aggregate and micro spatial level. The third study explores the temporal patterning of events associated with the MHA. Study 3 considers varying degrees of temporal specificity to highlight when MHA calls-for-service are likely to occur. Results indicate that MHA calls appear to cluster in times that are different from crime events. The collective results from this work emphasize the importance of studying the intersection between PwSMI and the police at multiple levels of specificity in order to more accurately identify where and when police resources are likely to be required. This knowledge may be of great use for administrators and policy makers who want to reduce police contacts with PwSMI or otherwise improve overall service delivery.

Keywords: Persons with severe mental illness; police programming; mixed methods; spatial and temporal analysis

Dedication

To my family and friends. Your love and encouragement was tremendous!

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Table of Contents

List of Tables

List of Figures

List of Acronyms

ACT	Assertive Community Treatment
BMHS	Brief Mental Health Screener
CCD	Complex Co-Occurring Disorders
CID	Crisis Intervention and De-escalation
CJS	Criminal Justice System
ED	Emergency Department
EDP	Emotionally Disturbed Person
EHS	Emergency Health Services
GUI	Graphical User Interface
MHA	*The Mental Health Act of British Columbia*
MCIT	Mobile Crisis Intervention Teams
PRIME-BC	Police Records Information Management Environment of British Columbia
PwSMI	Persons with Severe Mental Illness
RCMP	Royal Canadian Mounted Police
RMS	Records Management System
SAMI	Severe Addictions and/or Mental Illness
SMART	Surrey Mobilization and Resiliency Table

Chapter 1.

Introduction

Historically, the criminal justice system (CJS) has struggled to identify and treat the risk factors that tend to be associated with Persons with Severe Mental Illness (PwSMI) (Baillargeon, Binswanger, Penn, Williams, & Murray, 2009). Whether it is a correctional facility, courtroom, or the use of police services, some scholars suggest that the CJS functions more like a warehouse for persons living with mental illness and that it is incapable of providing efficacious care and treatment (Patch & Arrigo, 1999). The theoretical underpinnings for what causes this 'warehousing' has been of debate for decades. Some scholars suggest that, following the deinstitutionalization movement of the 1960s, the CJS became increasingly likely to criminalize PwSMI (Abramson, 1972). However, others challenge this position and highlight that no such CJS bias exists (Engel & Sliver, 2001; Engel, Sobol, & Worden, 2000) with some scholars going as far to suggest that there is little evidence to support the hypothesis that prisons and mental hospitals are functionally interdependent. A more plausible explanation is that there are significant 'buffers' that exist in the community (e.g., police cells, homeless shelters) that can account for the one-to-one transfer of patients from hospital to prison. And thus, the criminalization hypothesis is more likely indirect (Steadman, Monahan, Duffee, & Hartstone, 1984).

Regardless of whether the CJS discriminates disproportionately against PwSMI or not, their presence within all phases of the criminal justice funnel has been documented for decades and should not be overlooked as a temporary or minor problem. Solutions to eliminate or slow down the involvement of PwSMI within all layers of the CJS are well-documented. Canada, the United States, the United Kingdom, Australia and countries around the world have all implemented some form of policy to better respond to PwSMI. Unfortunately, CJS policy and programs for PwSMI are often pragmatic in nature and may lack a sound empirical foundation and/or theoretical basis that can then be used to test if the intended program was effective. Unidimensional or single-agency policies are common in this domain though the effectiveness of these policies is often one-sided (e.g., reduce recidivism) and neglects to account for the fact

that the intersection between PwSMI and the CJS is an intricate and complex relationship that is dynamic in nature. In theory, effective policies are multi-agency, multi-jurisdictional, and account for, or at least recognize, the myriad of factors that may lead a mentally ill person to interact with the CJS (much in the same way as the path of non-mentally ill persons who end up in the CJS) along with some sort of proactive and, if need be, a reactive solution or treatment plan that improves their well-being. The local political, financial, and social climate may further exacerbate the complexity of the solution as some PwSMI may cycle through multiple support systems (Patterson, Somers, McIntosh, Shiell, & Frankish, 2008). For a variety of logistical and political reasons, these services often do not effectively communicate with one another. The consequences of a lack of effective multi-agency responses that support PwSMI when they are ill, has resulted in unwarranted confinement, excessive use of force, or lead PwSMI to fall through the cracks of both the health and CJS.

More recently, scholars suggest that solutions to eliminate or slow down the overrepresentation of PwSMI in the CJS need to move beyond one-dimensional efforts such as those that focus on recidivism, and adopt broader strategic approaches which parallel an agency's corporate operational strategy (Coleman & Cotton, 2016). Whether the resulting policy initiatives result in program specific responses or broad agency-wide strategies, effective solutions to reducing the involvement of PwSMI within the CJS need to be based on the multiple challenges that exist within the local context (Reuland, 2010). Understanding the extent of these challenges is likely to require some form of additional research that should be based on the best available empirical evidence. Unfortunately, rates of contact that PwSMI have with the CJS vary greatly (Kennedy-Hendricks, Huskamp, Rutkow, & Barry, 2016; Livingston, 2016; Steadman & Morrissette, 2016) and is often dependent on where within the CJS the data has been collected and how the population is defined. In order to maximize the effectiveness of future initiatives (subject specific or broad strategic approaches), scholars and policy makers need to shift their focus to identify which layer of the CJS is the most important for targeting resources that will likely yield the best results for reducing the involvement of PwSMI in the CJS.

1.1. Sequential intercept model

Rather than a traditional theory, the sequential intercept model represents a conceptual lens that highlights various points of interception along the criminal justice continuum that are theoretically available to be used to divert PwSMI from being criminalized in 'deeper' portions or phases of the CJS (Griffin, 2015; Heilbrun et al., 2012; Munetz & Griffin, 2006). Munetz and Griffin (2006) illustrate their conceptual lens as comparable to the concept of the 'crime funnel' or the theory that the population of persons involved in the CJS becomes increasingly smaller as one moves from police, courts, and into the correctional system. Similarly, there is a total of five phases in the sequential intercept model with the first phases existing outside the CJS and the last phase being representative of community corrections and community support. Ideally, patients should be intercepted as soon as possible to prevent unnecessary involvement in the CJS. The first two stages of the sequential intercept are: 1) before entering the CJS though effective and comprehensive clinical practice in the community and 2) at the emergency service level (e.g., police and emergency mental healthcare). A consistent component of these two intercept points is that patients have yet to penetrate into the latter stages of the CJS whereby they proceed to formal criminal processing in the court and eventually into the correctional system. Early interventions are likely to have significant benefit to the patient as, for the most part, they tend to exist outside formal criminal processing that are likely to further criminalize the patient. Thus, in order to provide evidence-based policy recommendations to improve the delivery of services to PwSMI to hopefully improve their well-being and reduce the cycling throughout the CJS, an understanding of how PwSMI are processed at the early stages is arguably the most important phase to consider[1]. In the case of the dissertation, the focus will be on the sequential intercept's second stage: namely police contacts with PwSMI.

1.2. Brief overview of police contacts with PwSMI

With some scholars classifying them as street-corner psychiatrists (Teplin & Pruett, 1992), police officers routinely act as the first point of contact for PwSMI in the

[1] In cases where PwSMI commit a criminal offence, and enter the courts/corrections systems, the provision of additional mental healthcare programs may not be sufficient to reduce recidivism and supplementary resources will be needed to account for criminogenic risk factors (Skeem, Manchak, & Peterson, 2011)

CJS. As a consequence of the workload demand, and several high-profile cases (Iacobucci, 2014), there has been a widespread call to improve the quality and quantity of services in the community. A main reason to study the involvement of PwSMI within policing contexts is the 'gatekeeping' role that front-line police officers can play in determining whether and how a person is processed through the CJS (Lamb, Weinberger, & DeCuir, 2002). With their discretionary powers, police officers are often tasked to identify this population in crises and, ultimately, determine whether the client is processed as a patient through the mental health system or as an accused in the CJS (Franz & Borum, 2011; Lamb et al., 2002). Another reason to focus on policing is that the PwSMI interactions consume significant resources for confinement purposes and general police assistance (Charette, Crocker, & Billette, 2014; M. D. White, Goldkamp, & Campbell, 2006).

Much of the literature that is written in this area of policing places heavy emphasis on the small subset of PwSMI who continually cycle in and out of police custody (Reuland, Schwarzefeld, & Draper, 2009). For example, according to Constable Taylor Quee, a mental health liaison officer in Surrey, British Columbia: "I noticed that we are apprehending a lot of the same clients repeatedly. We were taking them to hospitals, they were being discharged, and we were taking them to hospital and the cycle was repeating" (in I. Cohen, Plecas, McCormick, & Peters, 2014: 71). The factors that are likely to lead an individual becoming a 'heavy user' of services tend to dominate local program and policy development. Around the world, there are likely hundreds, of policies and programs that aim to reduce the call volume with this subgroup (Heilbrun et al., 2012) . Such programs may include: mobile crises teams (R. L. Scott, 2000), liaison officers (McGilloway & Donnelly, 2004), speciality training programs/specialised police officers (Compton, Bahora, Watson, & Oliva, 2008; Franz & Borum, 2011; Krameddine, Demarco, Hassel, & Silverstone, 2013), pre-booking diversion programs (Steadman et al., 2001) and other collaborative units with other service providers like healthcare practitioners. For instance, Assertive Community Treatment (ACT) is often cited as the 'gold standard' for effectively reducing recidivism in PwSMI. Much like the heavy users that tend to drive policy, ACT team effectiveness tends to be limited to subgroups of the population such as forensic (Cusack, Morrissey, Cuddeback, Prins, & Williams, 2010) and recently released inmates from standard correctional facilities who are at a heightened risk for recidivism (Lurigio, Fallon, & Dincin, 2000; McCoy, Roberts,

Hanrahan, Clay, & Luchins, 2004). Focusing resources like ACT teams on a small group of PwSMI is arguably the best use of a finite (and often small) amount resources. However, it is imperative to note that police responses are not limited to a small cohort of PwSMI. As a population, one should anticipate that there will be a spectrum of contacts ranging from persons who have habitual contact with the police to those where CJS contact is rare, infrequent, and lasts for only a short time. Unfortunately, the notion of focusing on the population of PwSMI that contact police services, is rarely presented in the literature (Steadman & Morrissette, 2016).

Extending from the focus from small cohorts to population-level analyses broadens the evidence base to more fully describe the true nature of police work. For this area of research, there are relevant policing population-level factors that should be accounted for, such as the type of police contact. As has been shown by previous research, the types of interactions police have with PwSMI is not exclusively based on recidivism and more accurately falls on a spectrum with some interactions involving arrests whereas encounters do not directly involve criminal law enforcement (Brink et al., 2011; Livingston, 2016). It has been well-documented that a large number of police encounters with PwSMI (and non-PwSMI for that matter) often do not involve law enforcement and "involve people who are neither a danger to themselves or others" (Chappell, 2010, p. 289). Some of these non-law enforcement events may include, being a victim (Blitz, Wolff, & Shi, 2008; Silver, Arseneault, Langley, Caspi, & Moffitt, 2005; Teasdale, Daigle, & Ballard, 2014; Teplin, McClelland, Abram, & Weiner, 2005), to complaints, general occurrences and street checks (Crocker, Hartford, & Heslop, 2009), and referrals to psychiatric emergency services (Al-Khafaji, Loy, & Kelly, 2014; Klein, 2010; Larkin, Claassen, Emond, Pelletier, & Camargo, 2005; Wang et al., 2015). Expanding the traditional meaning of recidivism from criminal events to include a more global picture of police interactions would allow for a more complete picture of the nature of police-PwSMI interactions and this information may be crucial to explaining patterns in the criminal behaviour of PwSMI as well as other police calls-for-service (Charette, Crocker, & Billette, 2011; Green, 1997; Hiday, Swanson, Swartz, Borum, & Wagner, 2001; Silver, 2002; Silver, Piquero, Jennings, Piquero, & Leiber, 2011) as well as continual cycling in and out of other services within the community (e.g., emergency health services, housing units, substance use treatment programs).

Considering a spectrum of police interactions for all PwSMI adds much-needed empirical support for the totality of policing services devoted to responding to the needs of PwSMI, improves counts/estimates of the division of police labour, and may provide the necessary framework for improving programs and policies that are pragmatic in nature but lack a more holistic population-level lens. Large, population-based studies are intended to provide more consistent results about the global trends of recidivism (i.e., violent and non-violent events) and enable the inclusion of a wider range of psychiatric disorders that are not limited to, schizophrenia and other disorders that are commonly studied in specific samples from the total population of PwSMI (Morgan et al., 2013). Such an approach is echoed by Henry Steadman, a leading scholar in this area of research for decades. He and his colleague highlight that the role of police officers needs to change to better represent the continuum of police interactions rather than a specific set of crises (Steadman & Morrissette, 2016). One way of moving towards a broader holistic/spectrum of interactions that captures the population of PwSMI that interact with police is to study certain factors that can be aggregated to describe population trends. Although the previous literature would suggest there are many concepts worthy of further exploration, two factors specifically are useful for the current area of research. As will be shown in this dissertation, the elements of time and location are useful dimensions to address in the study of population trends in highly complex social phenomena, such as when PwSMI come to the attention of police services with many of these incidents not involving the need for criminal law enforcement.

1.3. Temporal and spatial research

At the temporal level, studies have investigated the impact of time on criminal offending for PwSMI in cross-sectional studies (Wallace, Mullen, & Burgess, 2004), but rarely have studies considered the patterning of police contacts with PwSMI longitudinally. According to Fisher et al. (2010), an understanding of temporal correlates that impact the rates of contact between PwSMI and the police "might provide administrators with predictive information about the type and size of agency clientele and justice involvement, helping them determine what patterns, if any, are cause for concern and where resources might most effectively be targeted" (p. 49). In the same paper, Fisher et al. (2010) studied the temporal patterns of arrest in a cohort of mental-health-service recipients over ten years. This study suggests that there are five heterogeneous

temporal trajectories with significant variability of arrest patterns. One commonality between groups was that felony crimes against persons were highly relevant to group membership and consistent across all groups. Perhaps one of the more striking findings in this study was that the effects of service use—residential programing and case management—did not have a meaningful impact on the rate of recidivism. This finding is highly relevant as it suggests the effectiveness of civil mental healthcare is limited at reducing involvement with the CJS (Skeem et al., 2011). Considerations of time in general, but more specifically, those factors surrounding police work that vary over time, are extremely important for the effective deployment of police resources.

At the spatial level, the population density of a given community and its physical location need to be considered when evaluating the impact and efficacy of mental health and criminal justice services. Contrary to the previous findings on the link between recidivism and treatment programs, scholars highlight that when there is a relative absence of mental health resources (e.g., beds for inpatient and community treatment) available in a community, this can lead to an increase in CJS contacts (Lamb & Weinberger, 2005). Rural and remote locations often have limited access to primary healthcare and provide even less access to mental-health-care providers. It is vital in any study (longitudinal or cross-sectional) to at least consider these contexts as the availability of healthcare resources, resultant social organization, and subsequent police response in rural settings is different than their urban counterparts (S. Decker, 1979). In these communities (but also in urban or more populated areas), the role of police officers becomes increasingly visible, because at times they are expected to provide pre-diversion support (Lamb et al., 2002) and may end up arresting mentally ill individuals, or ‘mercy-booking’ them, merely to ensure the protection of the arrestee and others (Watson, Angell, Morabito, & Robinson, 2008). At the community level, scholars have even suggested that the criminalized population of PwSMI often have limited access to proper housing, social services, steady education, or employment. As such, there tends to be a history of drug abuse, homelessness, victimization, or unemployment (Sinha, 2009). Additional environmental features, such as inclement weather, aggregate crime rates, and the degree of community disorganization (Hiday, 2006) can be highly relevant as well. More recently, scholars have explored the relationship between the environment—specifically place attractors or those locations where PwSMI are likely to routinely visit—and the concentration of calls for police service. Three important results

from this study are worth highlighting: PwSMI engage in a variety of events that come to the attention of the police, these calls are likely to occur in and around place attractors, and that the spatial concentrations of these calls are different from police calls-for-service that do not involve mentally ill persons (Vaughan, Hewitt, Andresen, & Brantingham, 2016).

1.4. Purpose of the dissertation

With much of the existing literature on police interactions with the mentally ill focusing on small subgroups of frequent users of services, much of the existing narrative is narrowly focused on a subgroup of the population that, in one way or another, consumes police resources. The result of focusing programs and policies on small cohorts can lead to the larger population of mentally ill patients not receiving timely service or receiving insufficient services. These shortcomings, though understandable given the complexities of studying a population defined by a health characteristic within the CJS, highlights the importance of casting a wider lens on the problem.

Through a mixed-methods research design, the overall aim of this dissertation is to identify the pertinent static and dynamic factors that are associated with police contacts that vary in terms of quantity and quality with the population of PwSMI. Three linked studies, presented below, contribute to the existing body of research. These studies expand the research through different research questions, data sources, and analytic approaches. The first contribution, provided in Chapter 2, presents a qualitative foundation to generate a base understanding of the nature of police work with this population. One of the findings from Chapter 2 highlights that police respond to PwSMI for a variety of reasons, many of which are processed through various problem solving techniques. Chapter 3 uses this notion of multifaceted police contacts to determine how these events concentrate in differing measures of space. A second finding from Chapter 2 was that the vast majority of police interactions with PwSMI were related to the *British Columbia Mental Health Act* (herein referred to as MHA). As a result, Chapter 4 explores the temporal patterning of events associated with the MHA. In this chapter, the focus is on the varying degrees of temporal specificity to highlight when MHA-related calls-for-service are likely to occur. Results from Chapter 4 indicate there is some temporal patterning at the macro level as well as more granular or micro temporal trends.

Chapter 2.

A qualitative exploration into the nature and quality of all police interactions with severely mentally ill persons

2.1. Introduction

With modern social systems de-institutionalizing their mental healthcare systems, failing to provide the necessary community-level treatment facilities, and enacting more restrictive civil commitment laws (Lamb et al., 2002), police contact with PwSMI was inevitable. Whether or not state systems 'criminalize' PwSMI, or over represent them in the CJS, is an issue of debate in the literature (Abramson, 1972; Engel & Sliver, 2001). What has been made clear is that, over time, there has been an increasing number of cases of mental illness that are processed through general practitioners (Olfson, Blanco, Wang, Laje, & Correll, 2014), inpatient care (Blader, 2011), and through the Emergency Department (ED) (Larkin et al., 2005). Arguably, these increases could be a result of the lack adequate community mental healthcare that never materialized following the deinstitutionalization movement. Regardless of the cause of this increase, other agents of the state (e.g., police services) are regularly used to fill this shortcoming of healthcare service. At times and in some locations, first responders such as the police, are the only agency available to assist PwSMI in crisis. Differences in police response between jurisdictions may be best explained by provincial/state and/or federal health legislation and criminal law. At a more local level, funding for community mental healthcare and healthcare more broadly, police expenditures on training and programs, and the overall mental health strategy/attitude towards vulnerable populations make it reasonable to expect that the nature of police work (i.e., the quality and quantity) that is tied to PwSMI will vary.

2.2. Background

Scholars have highlighted that the volume of police contact tends to be higher in populations living with mental illness (Hoch, Hartford, Heslop, & Stitt, 2009; Robertson, 1988). Precise estimates of how much greater the contact is with PwSMI are a challenge

as data quality and consistency issues often hinder the ability of researchers to differentiate between populations living with and without mental illness. One primary cause of this ambiguity relates to the fact that mental illness is a health issue being documented as best as possible by criminal justice professionals within their records management systems (RMS). In comparison to tracking crime and victimization data, these systems were never intended to account for 'health' data. In the event this information is to be recorded, front-line members, analysts, and other clerical staff may be required to make some assumptions about the underlying nature and quality of the behaviour exhibited by the patient and operationalize this in the RMS. The end result can lead to some discrepancies in basic counts both within and between police services.

Another overarching challenge to making comparisons between police services pertains to the contextual differences. More specifically, the differences in rates and types of police contact between two jurisdictions may be a result of discrepancies in recording data, data management practices, police practice, and budgetary constraints (Blevins, Lord, & Bjerregaard, 2014). For example, enhanced training is often cited as a useful tool to help police improve responses but such initiatives in pre-employment settings may mean that some other piece of training will need to be omitted or moved to make room for the mental health education. Tied to budgets and training is the use of specialty programs. A multitude of specialty units, intervention teams, and mobile crises teams are in use across North America and around the world and most will require funding or a shift in resources to make them work. One could (and should) be able to argue that if a specialty unit exists within a jurisdiction, then a police service must have illustrated that there was an above average number of calls-for-service involving PwSMI, or that the level of policing expertise was unable to meet the needs of the PwSMI population.

2.2.1. Prevalence

A recent meta-analysis highlights this anticipated diversity in the estimation of the size and nature of PwSMI-police interactions. Based on dispatches and other encounters, Livingston (2016) illustrates the high degree of variance in police responses to PwSMI by suggesting rates can be as low as less than 1% (Charette et al., 2014) and as high as 2% (Hartford, Heslop, Stitt, & Hoch, 2005). The administrative research by Crocker and colleagues (2009) pooled longitudinal data over a six-year period to identify

and extract police files that included keywords and phrases that pertained to mental illness. In comparison to individuals living without mental illness, PwSMI were represented in less than 1% of police contacts but they were more likely to be involved with the police for suspected offences and actual offences in comparison to non-PwSMI. Other studies have suggested a much higher rate with figures reaching as high as 25-31% of police contacts involving PwSMI (Szkopek-Szkopowski et al., 2013; Wilson-Bates, 2008), though the methodologies of these studies have been questioned by scholars (Boyd & Kerr, 2016). Accuracy issues aside, with potentially such a diverse range of contacts between studies, the reference point for the 'scale' of the problem lacks clarity. Like crime statistics, there is an inextricable link between crime rates and the local context, and not accounting for this information can lead some to generalize that what looks like an epidemic in one community is present in other communities. This issue appears to be amplified when studying the intersection between PwSMI and police services. Given the vastness of the data, collection procedures, and policing contexts that exist in Canada and around the world, findings of the quality and quantity from one jurisdiction to another should be cautioned.

2.2.2. Factors that affect the data

Aside from the known factors that will influence policing statistics, to various degrees, four broad categories appear to be directly or indirectly relevant in the shaping of the nature of police-PwSMI interactions: population density and location of a community, timing or developmental factors for subgroups of PwSMI, how the population of mentally ill persons is defined by the police, and police decision-making and the presence of policies and programs. Together, these factors may impact the patterns of police work and thus data generated by these calls-for-service.

Community factors

Police-PwSMI research often emerges from major urban settings. In Canada, these settings are often Vancouver (Boyd & Kerr, 2016; Pickett, Stenstrom, & Abu-Laban, 2015; Szkopek-Szkopowski et al., 2013) and Toronto (Iacobucci, 2014). Many of these larger settings having some local policy or operational framework in place to assist with the direction of available services. Narratives from rural and remote locations are virtually absent in the area of mental health and policing and inferences to the context

surrounding the quality and quantity of police work tend to be indirect. It is important to include this rural aspect as the health profile of these residents is likely different from their urban counterparts. In rural and remote environments in Canada, it is common for the police to be the first and only line of contact for the population to access services. For PwSMI this is particularly problematic as for example, in rural populations the population may be at a heightened risk for hospitalization because of a mental disorder, have lower life expectancies, and tend to be more likely to consult a nurse or nurse practitioner because of an illness (Pong et al., 2011). These communities often have more difficulty accessing substance use programming (Sexton, Carlson, Leukefeld, & Booth, 2008) and inadequate services in these communities may result in an increased use of police resources to provide *de facto* mental healthcare. This is not to suggest that the provision of services in urban settings is bountiful as the lack of supportive housing, treatment facilities, and employment opportunities may also exist which can lead to a further need for police resources to respond to PwSMI.

Specific to policing, working in rural and remote locations presents unique challenges (S. Decker, 1979; Eby, 2011; Merritt & Dingwall, 2010). In these communities, the police officer needs to be an 'expert generalist' which may include specific responses to substance use, psychogeriatrics, youth mental health, suicide, and other aspects that may intersect with a patient's mental well-being (Forchuk, Jensen, Martin, Csiernik, & Atyeo, 2010). As part of his/her 'expert' role, an officer will need to assess risk, triage a patient, and determine the next course of action. In urban settings or those rural settings with emergency mental healthcare, addictions services, et cetera, this decision-making does not by default fall onto the responding police officer.

Timing and developmental factors

The duration between police contacts and other development factors represent a second cluster of variables that may be influential to the trends in the data. Evidence suggests that there are subgroups of PwSMI that continually cycle through police, courts, and correctional settings as they become entrenched in the CJS. In British Columbia, this subgroup of PwSMI represents a small proportion of the population although they are likely to have a high number of contacts within the CJS (Matheson et al., 2005; Somers, Rezansoff, Moniruzzaman, & Zabarauckas, 2015). For some, these contacts may occur within a relatively short period of time with a sizable number non-

violent and disturbance contacts (Roy et al., 2016). Scholars suggest that of all police contacts PwSMI have with police, as much as 40% of all these interactions do not involve the enforcement of criminal laws (Brink et al., 2011) with some subgroups being highly likely to be involved in minor offences (e.g., homeless populations) (Fischer, Shinn, Shrout, & Tsemberis, 2008).

Aside from the underlying mental illness that has caused some of the police interaction, Hodgins and Janson's (2002) study on the developmental etiology of criminality among persons with mental disorders highlights that the rates of contact with police may vary with age because of underlying mental illnesses and development. The authors also found that comorbid diagnoses of alcohol and drug use disorders, as well as personality disorders (particularly antisocial personality disorder), are often associated with a general measure of criminality. There is reason to suggest that the formative years of youth development are relevant in the pattern of involvement of mentally ill persons in the CJS as well as the underlying mental illness. In theory, policing contacts may also mirror these trends, perhaps in jurisdictions where the availability of beds for inpatient and emergency patients is limited (Kutcher & McDougall, 2009).

Definitions

How PwSMI are defined and then operationalized in databases varies greatly between (and within) service providers. Arguably the most accurate stage of the CJS to define mentally ill persons is at the correctional/court level. This layer of the CJS often has access to actuarial assessment and/or risk assessment instruments, as well as other legal procedures defined by the law, to accurately diagnose mental illness. Unfortunately, the police often are not privy to such information and may rely solely on their training and work experience with similar clients, or a statement from the client him/herself. Within policing contexts, various terms are used to define the population. Some scholars have used the term 'emotionally disturbed persons' (EDPs) (Chappell, 2010; Steadman, Deane, Borum, & Morrissey, 2000), 'people in crisis' (Iacobucci, 2014), 'persons/people with mental illness' or some variation of this (Borum, Swanson, Swartz, & Hiday, 1997; Coleman & Cotton, 2010), and others have defined the group as psychiatric persons, consumers, or other psychiatric terminology (Krameddine et al., 2013; Watson et al., 2008). Some researchers also include substance use/misuse in

their definition, such as what Patterson, Somers, McIntosh, Shiell, and Frankish (2008) have coined, the ‘severe addictions and/or mental illness (SAMI)’ population. Including substance use in how the PwSMI population is defined is useful as a significant number of persons with criminal justice involvement may also be dependent on substances (Roy et al., 2016), and this may increase the level of risk for contact with the police (Abram & Teplin, 1991).

Policy and decision-making

In terms of policies and practices designed to reduce recidivism and/or improve patient connectivity to resources, there are likely dozens, if not hundreds, of programs that operate around the world that utilized mental health and police resources independently or through co-operative programming. Most westernized nations have some form of legislation that defines how PwSMI will be processed through the public and forensic systems. In British Columbia specifically, the MHA provides the legislative direction for police officer decision-making practices. Another initiative which influences police practice are formal training programs. These training programs often include in-class and practical educational techniques and are often cited as being useful for improving police-PwSMI interactions (Iacobucci, 2014; Teller, Munetz, Gil, & Ritter, 2006). More specifically, when the training focuses on identifying signs of mental disorder, police officers tend to avoid unnecessary arrest and use of force when PwSMI appear to be aggressive or confrontational and use de-escalation techniques where appropriate (Coleman & Cotton, 2010; Steadman et al., 2000). At the programming level, additional police services may be delivered by mental health liaison officers, or members who are tasked with problem-solving PwSMI involvement with police services through correspondence with key personnel working in the mental health system (Cotton & Coleman, 2010; McGilloway & Donnelly, 2004). Whether it is specific police officers or an overarching policy for an entire police service, liaison programs have been shown to be effective at identifying offenders with mental illnesses and, assuming they are available, connect them to appropriate services within the community (D. A. Scott, McGilloway, Dempster, Browne, & Donnelly, 2013). Other options that have been in use around the world that have shown to be effective over a variety of measures are Mobile Crisis Intervention Teams (MCIT) (Kisely et al., 2010; Rosenbaum, 2010) and ACT teams (Aubry et al., 2015; Staring, Blaauw, & Mulder, 2012). In theory, police services

that invest in training and other programming will be better equipped to respond to PwSMI which may result in different overall trends in their interactions with the population.

Arguably the most developed areas of the literature that may help explain the nature and quality of police interactions with PwSMI are decision-making studies and the various local and territorial policies and practices that have emerged over the past 30 years. Research on how police decision-making behaviour emerges almost 50 years to Bittner's (1967) seminal work on emergency apprehensions of PwSMI, and has continued with different theoretical and contextual lenses throughout the years (Morabito, 2007; Teplin, 2000). More recently, scholars have pointed to the complexity of mental health encounters and how many of these interactions fall inside a 'gray zone' whereby the formal legislative parameters are not appropriate (Schulenberg, 2016; Wood, Watson, & Fulambarker, 2017). Police decision-making in these cases are highly dependent on an officer's knowledge of community resources, working with families and community members to resolve the situation, and finding short-term solutions for what are often chronic mental health problems for the patient. In some jurisdictions, there may be a significant separation between the legislative/policy boundaries that are intended for police response to PwSMI and how police officers respond to a call-for-service. For example, the MHA provides the guidelines for how to respond to a patient in acute crisis, but it often cannot guarantee that the healthcare services that are needed to complete the call will be available, and what police officers can do as an alternative option[2].

2.2.3. Aim of the chapter

Research highlights that the prevalence rates for police contact with PwSMI can vary dramatically. Several causes to why this may be the case include community factors, local trends within the PwSMI community, how the population is defined by police, and overarching policy and decision-making practices. Using these themes as a guide for deductive qualitative inquiry, the aim of the current study is to better understand the factors that lead to a call-for-police-service involving PwSMI, the

[2] Police officers in British Columbia have the option of applying the MHA through one of four avenues: 1) S.28 (involuntary patient is apprehended on the discretion of the police officer, 2) Form 4 (medical certificate for involuntary patient-issued by a physician, 3) Form 10 (warrant for apprehension of patient-issued by a judge or justice of the peace), and 4) Form 21 (warrant for apprehension of patient-issued by a medical director of a designated facility)

experiences police have with the population, and the possible path(s) to police response. I elect to use a qualitative approach as it allows for cross-agency comparisons of narratives that may have emerge outside of the four theoretical themes that direct the initial questioning to police officers.

2.3. Methodology

A series of interviews and focus groups with a purposive sample of subject matter experts were conducted. The four theoretical themes factors that were posited guided the interviews and focus groups, but I also wanted to encourage participants to describe the nature of their interactions when working with the PwSMI population openly to highlight some of the factors that may direct their decision-making. More specifically, they were asked to highlight the different types of interactions they have, the role of the environment, trends in their encounters with the PwSMI population, and any programs and policies that they use to help improve their responses.

Sample

Twenty-seven subject matter experts in policing were consulted for this study. All participants worked within the Fraser Health Authority, a health region in the south-west section of British Columbia, Canada that services approximately 1.6 million of the population. Within this catchment area, there are five independent-municipal police agencies, a regional Transit Police Service, and various contracted police forces by the Royal Canadian Mounted Police (RCMP) – Canada's national police force. A significant proportion of the geography in this region is made up of rural and remote areas. More often than not, the RCMP is responsible for provincial police duties in these areas. To illustrate this geographic variability within the catchment area, Figure 2.1 provides the reader with an overview of the policing boundaries for the different police agencies, the location of hospitals eligible to receive mental health patients that have been apprehended by police services under the MHA, and major road networks that connect the various communities within the Fraser Health Authority.

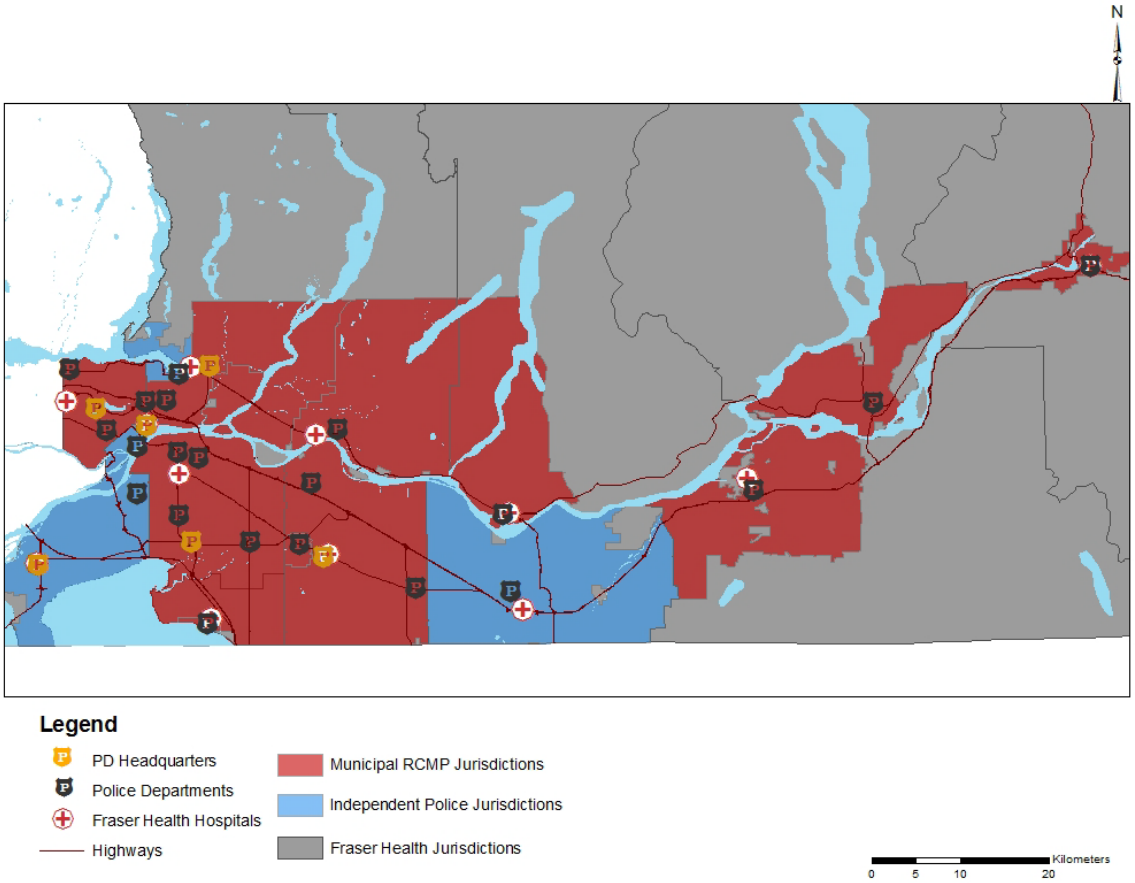


Figure 2.1. Police services within the Fraser Health Authority

The sample for this study consists of 10 female and 17 male participants with a wide range of policing experience (range = 3-35+ years). The policing roles varied from front-line general duty officers to shift supervisors, officers in command, emergency response team members, and liaison officers. All 27 experts in this study had extensive experience working directly with PwSMI in their current policing role either through direct contact with patients or from an administrative level whereby they were tasked with managing staff and programming.

Research procedure

The majority (96%) of the interviews took place in person at the participants' office or the first author's office. Scheduling conflicts and travel challenges (e.g., weather) led to some interviews being conducted via telephone after standard business hours. All interviews were audio-recorded and supported with notes. Recordings were transcribed verbatim following each interview on a secure computer. All data were

verified by the first author before analysis. For a copy of the interview guide used in this chapter, please refer to Appendix A.

Using NVivo V.10, data were analysed using conventional content analysis (Hsieh & Shannon, 2005). In order to make inferences about the nature and quality of police-PwSMI interactions, a three-stage coding technique was applied to the data. In the first stage, all transcripts were read to capture an overall understanding of the breadth of qualitative data. In the second stage, a series of holistic open codes were identified, followed by another, more thorough, review of the transcripts. Once all of the transcripts had been coded a second time, notes, themes, and other observations in the data were compared in the third stage. This iterative process continued until the final themes and subcategories were generated.

2.4. Results and discussion

Interview questions pertaining to the quality and quantity of police interactions with PwSMI generated three main themes: risk assessment/call complexity, a profile of patients who regularly interact with police services, and data management issues. Within the risk assessment theme, two subthemes of assessing patient behaviour and the method of police response emerged. Bound within the discussions surrounding data, some participants highlighted methodologies for improving data quality in this domain. The results from this chapter were instrumental to the framing of Chapters 3 and 4 in this dissertation.

2.4.1. Risk assessment

The first theme highlights the complex nature of police interactions with PwSMI. To illustrate this wide range of calls-for-service, it appears that all calls with PwSMI fall somewhere on a ‘mental-health risk spectrum’, where the primary factor that dictates where the call falls on this spectrum is the amount of influence that mental illness has on the call. On the one extreme, when PwSMI are in a state of crisis, calls are deemed to be high-risk because the officer believes the patient’s behaviour is caused by an underlying mental illness that may result in harm to him/herself or others. As per S.28 of the MHA, the patient is then transported to a designated hospital for evaluation. Calls pertaining to suicide are also seen as high-risk that are likely to result in another trip to

the ED. If mental illness was deemed to be present in the context of a serious criminal event (e.g., homicide, aggravated assault), charges will be sought and the suspect will be processed through the court system. On the other end of the risk spectrum is low-risk police interactions or when PwSMI are not in crisis. Here, police officers can use more of their discretionary power to caution an individual, provide general assistance, or intervene in another way that does not involve the enforcement of criminal law. An example of a non-crisis situation is one where a patient is known to have a history of mental illness but he/she is on his/her medication and otherwise doing well. In these instances, the patient could be seeking general assistance from police officers such as proactively attending the police department in search of mental health services. Often these interactions encompass the proactive policing duties performed by liaison officers. In the middle of this spectrum lies an array of interaction types that are neither overtly crises nor non-crises. In these 'grey area' cases, the influence of mental illness is not overtly clear to the responding officer, but there is usually some evidence to suggest that mental illness may be a factor that is causing the subject's behaviour. Notwithstanding the assessment of risk to the patient or others, Participant 13 highlights that, whenever possible, police should adopt a mentality of assistance and helping:

> It may be enough to say that we have a number of people in our community that are destabilized. And it could be for alcohol. It could be for narcotics and whatever other substance. It could be for mental illness or it could be a combination of all those things. [It] really it doesn't matter. What matters is we care about them, and we should care for them. And they need assistance because their families are done, they have no friends anymore, they're on their own. So we can either decide to discard them or deal with them. And I think we should step up and help them out.

Within this risk assessment, participants discussed their ability to provide effective service as hinging on three factors: 1) the behaviour of the patient, 2) the police response itself, and 3) the availability of emergency mental health, community addictions services, and supportive housing facilities. Table 2.1 provides a generic graphical representation of the risk spectrum for calls involving PwSMI to illustrate the differences between levels of risk and how each subcomponent can influence the outcome of a call-for-service.

Table 2.1. Risk Spectrum

Level of Risk	High	Grey	Low
Initial event description	911 dispatcher reports a potentially suicidal person/jumper on a bridge.	Disturbing the peace/nuisance call/trespassing.	Family member of the patient arrives at the front desk of their local police agency.
Patient behaviour example	Patient is hearing voices and is threatening to hurt themselves.	Patient has been sleeping in a doorway of a commercial business.	Family members is worried that his/her son's mental well-being is decompensating over time
Police response example	Apply a S.28 apprehension under the MHA-Take to ED for mental health evaluation.	Police officer connects patient to family/friends who live in the neighbourhood.	Liaison officer/outreach team provide information about supportive housing and community mental health.
Community resources example	N/A	Need for local supportive housing for patient.	Community-based youth mental health resources that family members can access on behalf of the patient rather than using police services.

Patient behaviour

Patient behaviour, such as what the patient said, how he/she said it, his/her thought processes, his/her physical appearance, body movements and body language, as well as emotional reactions, was by far the most important determinant of how a call would be processed. However, a patient's behaviour did not always lead to a clear distinction that he/she was mentally unwell. As Participant 2, a mental health liaison officer, illustrates:

> We get this call that [patient x] hasn't shown up for some mental health appointments, so I went out with the mental health worker to check on that person. Reports from the family were that they were doing relatively well and that they were stable. I went inside the apartment, started talking to the gentleman to build a rapport around the back balcony where he was doing some gardening. I asked him if he could put the garden tool down and the next thing I know, his face and jaw were clenched and he was swinging the tool at me. I had to make the decision to protect the mental health worker and apprehend him.

In the case of a serious violent offence that was associated with mental illness, patients become 'accused persons' and are subsequently processed through the CJS. However, cases where a patient looks to be aggressive and 'criminal' do not always lead to the CJS pathway because of the assessment of risk. Participant 1 explains:

> We have one really common patient whose baseline is really high. He is chronically delusional and really unwell. And, he's just a big guy, really loud and he gets frustrated easily at minimal life events. He is always yelling and looks intimidating. But that's just his baseline and in years and years [of police interactions] he has never been aggressive to any community member or police person.

In this case, the rapport that police have developed with this patient over time aids in their ability to assess risk more accurately. This rapport building could be as simple as learning about a patient's medications, what sorts of things escalate/de-escalate a situation, family contacts, and other pertinent information. As Participant 1 stated, when working with a person in-crisis:

> It varies with the officer who is doing the talking. I have seen some people try to push it and it goes south in a hurry. It'll end up in a fight and you'll end up in a big wrestling match. Take your time with these people and realize they are not criminals. Soft; everything soft is always better with people suffering from mental illness.

Police response

Ultimately how a call will be processed will be up to the discretion and decision-making pattern of the responding police officer(s). Given the wide array of interactions that police have with PwSMI, it was quite evident that police responses were correspondingly diverse. Morabito's (2007) concept of the 'manipulative horizon' or the idea that public safety concerns play a major role in directing police officer decision was a common discussion point in the current study. Initial risk assessments were highly focused on the patient's risk to themselves and the public. This assessment of risk appears to be related to the officer(s)'s level of experience:

> I think as experienced police officers, the best way to describe us is we are readers of people. That's what we do. You know reading how their body acts, what are they looking at, are they engaging with me? Are they escalating or de-escalating (Participant 19).

If a patient has committed a serious violent offence or he/she is a harm to him/herself or others, police officer discretion is more restricted. In these cases, an officer's response is understandably pragmatic to ensure safety to the officer, patient, and others involved in the call. Figure 2 provides an example of a S.28 apprehension under the MHA, which is a common path for high-risk patients who require police transportation for a formal mental-health assessment at an ED. The red section in Figure 2.2 represents the

various stages of assessing risk. The green section represents the decision-making process and the blue section provides an overview of the ED logistics.

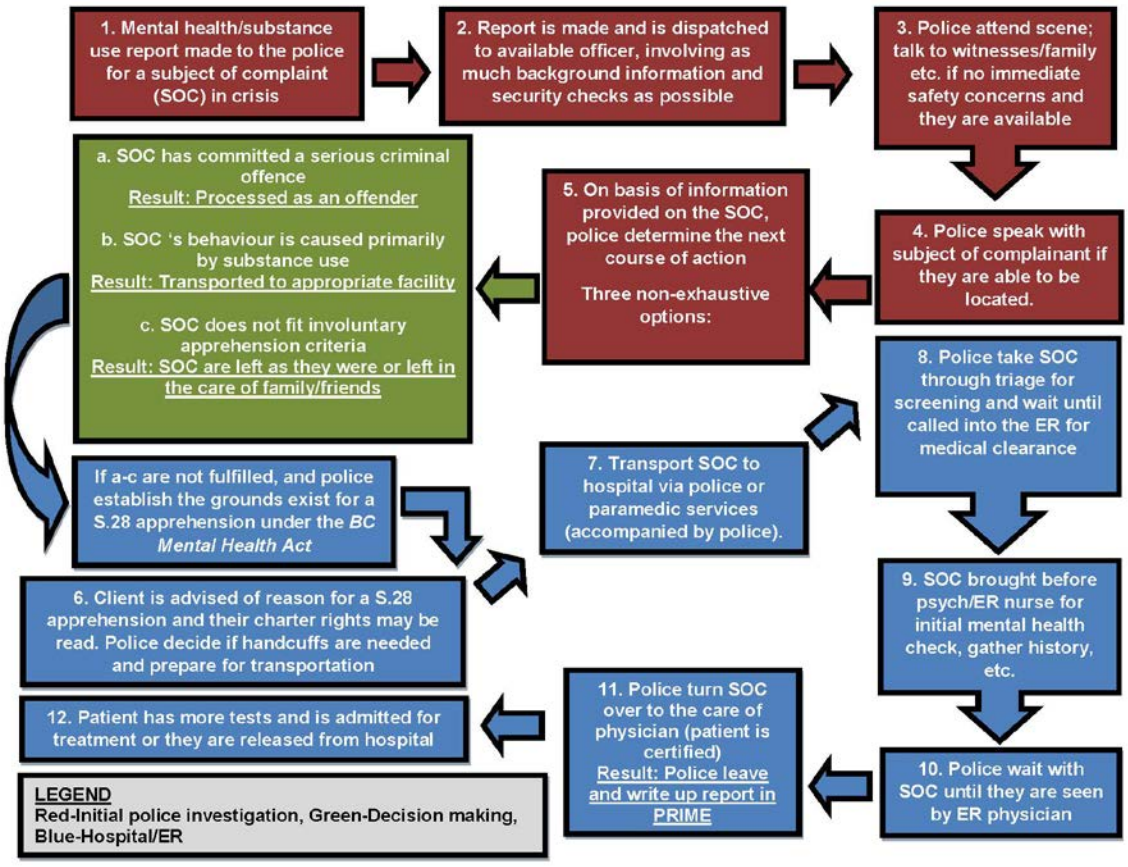


Figure 2.2. Mental Health Act S.28 apprehension flow chart

Participant 11 highlights some of the key points raised by a S.28 apprehension from the MHA and the potential congestion that can emerge at the ED:

> You may spend 10-15 minutes with the client, maybe a half an hour, which is not a lot of time. We have had to call for an ambulance to come to transport them for some people that need to be strapped down because they are just wild. Then we go up to the hospital and it depends how busy they are. I've had my guys sit up there for 3 and 4 hours waiting to have this person looked at by a medical doctor. I've been at [hospital X] where there's been 2 [police agency 1], 2 [police agency 2], and 2 of us and we are all sitting around with our clients for hours. It's a waste of resources is what it is.

Other non-violent offence types such as drug, property and public order offences were also common causes for a police call-for-service. Comparable to previous research (Schulenberg, 2016), results from this study indicate that in these non-violent events,

police response was highly variable and was linked to the overall seriousness of the event, the characteristics of the incident, and other situational factors. As a consequence, the less-serious criminal events and those that fall outside the scope of the MHA are likely to fall on the 'grey' and 'low' sections of the risk spectrum in Table 2.1. In these cases, the police response may involve, for example, having an extended conversation with the patient (and perhaps their family) in an effort to find some degree of informal or temporary solution to resolve the call. Wood et al., (2017) suggests that police officers prefer informal/provisional solutions and the majority of participants in this study (particularly the liaison officers) also shared this sentiment as it allows them to problem solve on a case-by-case basis.

In terms of workload, a recent study from the United Kingdom highlights the immense cost that can occur when police respond to PwSMI to transport them to the hospital for medical evaluation/treatment (Heslin et al., 2017). In the present study, some participants highlighted that in addition to hospital wait times, in some cases, the initial police assessment can be quite laborious. As Participant 17—a mental health liaison officer—explained:

> I have spent two hours talking to somebody with a mental illness and getting their cooperation to go to the hospital with me. They are going to be apprehended so they don't have a choice. But I tend to take more time in trying to convince them that it is their choice. General duty members don't have that time.

This extra time that the police take with assessment is crucial to ensure the safety of the patient. As another Participant illustrates, when apprehending a patient,

> Physically you could just grab them and put them in the back of the car. But my personal thought is, that's where the problems start. So now you are fighting somebody. Why? When you could take that time. And our training, our CID [Crisis Intervention and De-escalation] training dictates that we develop a rapport and some questions we can ask.

Other problem-solving techniques that may be used by police services is to call for assistance from supporting agencies. This can include, but is not limited to, the assistance of paramedic or Emergency Health Services (EHS). As Participant 4 suggests:

> …if the patient has an injury or drug use, I would say that most people call EHS to transport and one of us would ride with that person in the ambulance or I

> would follow to the hospital. Our relationship with EHS is very good and I would say, generally speaking, once ambulance attendants are there, the patient may be a little more agreeable to going [to the hospital]. Other times, if they are having a psychotic break, they are going to be strapped down, and you know, it's not very nice, not very pretty from start to finish. I find the ambulance gives the perception of healing and I find that clients will deescalate.

All participants in this study provided high-risk examples that required physical restraint that is necessary to ensure the patient's safety. However, how these use-of-force options are applied varied from participant-to-participant and were often patient specific. From the perspective of Participant 1, the process for how to restrain a patient can change in an instant and it is the police officer's responsibility to maintain control until the hospital admits or discharges the patient:

> I had a young girl who was in the hospital two weeks ago. She was admitted and discharged and now she was swinging a branch around and saying there's a bomb in her car. Just completely out of it. I brought her in [to the ED], she was sweet as pie for about an hour. [After that] I could see the frustration for sitting so long, and she started picking at people in the waiting room. She told a four year old boy to 'fuck off' and started advancing on him. So, I put her back in handcuffs and there was a screaming match that I was hurting her. It's terrible. People watch. For us to go hands on with a 100 lbs girl it's not good for her and it's not good for us.

Police interactions with patients in non-crisis situations may result in a larger range of police officer discretion. In these cases, the assessment of risk and availability of community resources will determine the outcome of a case. Risk may be based on the immediate behavioural cues that the patient exhibits but the history of police contacts may also impact these discretionary police interactions. Experience with respect to PwSMI with a long history of failed attempts at treatment or those with a history of violent behaviour can inform how a call will be processed by the responding officer. Furthermore, several participants recognized that individual police calls-for-service do not occur in a vacuum with some PwSMI having repeated contacts with different police agencies over a matter of hours, days, weeks, months, or years. The knowledge acquired by police officers with habitual users of police resources is invaluable to not only the responding police officer but the agency as a whole.

Regardless of the level of risk, the approach made by the officers in this study was overwhelmingly focused on the safest intervention possible to reduce injury to the patient. There were incidents where compliance tools were used on patients but only

when necessary. CID training was cited in several focus groups as a program that improved risk management strategies and as Participant 22 explains, effective officer communication with PwSMI is essential:

> Again, you got to hit the buzz words. 'Do you want to harm yourself? Do you want to kill yourself? Do you have thoughts of doing harm to you and that…' You know what I would do at that point? I would talk to the person and ask them where they live, if they have any relatives I have to feel good that if I let this guy go, in the next ten minutes he doesn't go out and walk in front of a bus. If I let him go, then I am not doing my job.

On the other hand, some officers' approaches were pragmatic in response to the behaviour of the patient at the time of the call. As Participant 8 explains, understandably, the focus for some police officers is to maintain a position of safety:

> General duty members don't really sit there and go 'Is this mental illness or an addiction?' They don't care at least in the initial stages. What they care about is 'are you safe in the public?' And, if not, then you are coming with us. Either you are arrested for an offence or you are apprehended under the *Mental Health Act*. Either way, we're going to make them safe and the public safe.

Community Resources

Comparable to previous research (Morabito, 2007; Wood et al., 2017), local knowledge of the availability of resources in the community can be vital to the police decision-making process. However, these resources only appear to be vital to grey area or low risk situations as high risk situations often result in a default response that requires processing through the ED or the CJS before the patient is released back into the community. Community resourcing in the context of this paper is generic and covers multiple elements in a similar manner to Morabito's (2007) concept of the 'scenic horizon' whereby the importance of community features can influence police decision-making. It includes organizational policies that result in collaborative policing-healthcare units such as an ACT team or a mobile crisis team. In some cases, the discussion turned to the availability of supportive resources within the local community. These discussions were often focused on the grey area cases where a patient was not sick enough to be committed through the civil mental health system in a hospital, but he/she was having regular contact with the police. Police officer experience can be crucial here

as it can help direct the patient, or perhaps more importantly, where he/she should not be directed to:

> A good example would be one we had a couple of weeks ago. It was minus 20 degrees, and [client x] is out there wearing hospital pants, he's got no shoes on, he's wearing hospital socks, and he's high on coke. He's all jacked up but knows where he is but he's not going to be able to care for himself because if you leave him to freeze in the elements, you know his last contact would have been with me. [In this case] we arrest him for being unable to care for himself like an 'intox in public' and take him to a detox centre. Give him a safe place, a warm place because you can't take him to a shelter, they won't accept him.

This idea of police officers having 'limited options' on where to take a patient like 'client x' was discussed at length by several focus groups. Often, it was not a lack of knowledge of how to process a patient, but it was more of a lack of the necessary services within a given community that would be most likely to help a patient. For example, a police officer may know that a patient needs substance use assistance, but a lack of beds in his/her community can significantly limit his/her discretion as to what to do with the patient. For some, the availability of resources in their community, particularly in the rural areas, was a major challenge for effective service delivery:

> We don't have sobering beds in [jurisdiction X] which is a challenge. We don't feel that police cells are appropriate for somebody who is extremely intoxicated. And sometimes we take them to the hospital where they will medically clear them but we feel it is still not the appropriate place for them. There are sobering centres in other jurisdictions that I've used for really problematic clients. I've used it a few times.

The knowledge about the available resources/treatment places available within the community is invaluable to police liaison officers and provides them with a starting point for discussion and collaboration with community partners. However, building these collaborative relationships can take a copious amount of time. As Participant 11, a mental health police liaison officer, noted:

> I can't even tell you how invaluable the connections [are that] I've made with Fraser Health. We are talking about sharing information which you typically don't see. It's working within the privacy act… It's taken us four years to build that trust, the education, and it makes it much it makes it much easier to get things done.

A. Heavy user patient profile

As expected, the definitions used to describe PwSMI varied greatly between the interviews. However, the second major theme that emerged in the data were descriptions of a subgroup of PwSMI who had habitual contact with police services. Some scholars refer to this group of patients as 'frequent flyers' to highlight the wide array of psychiatric, psychosocial and substance use issues that among other things, tend to increase the likelihood of CJS involvement and make treatment programs more difficult to implement in comparison to the general population (Althaus et al., 2011). For this paper, the terms 'heavy users' or 'subgroup of PwSMI' are used to describe patients with a large volume of police calls-for-service. Though this group is likely to have had numerous contacts with other service providers (Somers et al., 2015), outside of a patients police contacts, most participants in this study were concise with their comments about the degree of service use a patient may have had with other agencies. The cause to this most likely relates to the fact that police officers do not have direct access to other agencies databases that would allow them to speak to number of contacts a patient has had with another organization in their community (e.g., housing).

In regards to the actual size or number of persons found within this subgroup, participants estimated the numbers to range from a handful of patients in rural communities, or those less densely populated, to several dozen in the larger urban settings. For many of these heavy users, they continually cycled through police custody as well as various healthcare and social services. Consequently, efforts to understand this subgroup from a policing lens should consider all police contacts that include, but are not limited to, criminal acts, victimization and other non-criminal acts, and the use of the MHA. Participant 7, a mental health liaison officer, explains an incident that highlights this multifaceted nature of use of police and community resources:

> We have a guy, [name redacted], he's in [City x]. We got 7 or 8 calls on him over 2 or 3 days. It was getting out of control. Where I got involved, I was off duty so I came into work and the call the night prior had been he had been on a Sky Train at [Sky Train Station X], and he pulled out a diving knife about 14-15 inches long and those people were caught in that capsule with him, locked in as it moved from [Sky Train Station X] to [Sky Train Station Y]. Terrified those people. Here's the kicker. He was terrified too. That's why he had the knife. He was terrified! So I called Surrey ACT team, they already knew him, they had him, they were caring for him.

Though not all patients were members of an ACT team or another form of focused case management, their effectiveness at reducing recidivism in heavy user-type populations varies in the literature (Morrissey, Meyer, & Cuddeback, 2007). Nevertheless, several participants in this study perceived ACT teams as beneficial as these services may provide outreach emergency mental health as an alternative to S.28 or other police responses.

Heavy user patients also appear to have similar social needs. The need for housing and addictions services that are co-morbid with an underlying mental illness was quite common as exacerbating the need for police services. Some of these socio-medical difficulties may be vital to explaining why some patient's cycle between the ED and police custody within a short period of time. Many participants provided anecdotes of the challenges of working with this highly vulnerable population:

> I would say of the frequent ones that come to mind, they pretty much have all bases covered. They're homeless, drug or alcohol-addicted and have mental health issues. So if you have all three of those things, we deal with them daily (Participant 22).

Within this subgroup, it appears that patients with complex concurrent disorders (CCD) are the most at risk for recidivism throughout state service. They often experience a high volume and regular frequency of contacts with police, the ED, the correctional system, and for some, the forensic psychiatric system. Much like the views expressed by the participants in the current study, previous research has consistently shown that the current approach to responding to CCD patients is largely ineffective at reducing the constant cycling through various health, social, and criminal justice services and improving patient outcomes over time (Akins, Burkhardt, & Lanfear, 2016; Cheung et al., 2015). According to Participant 12, CCD patients make up the bulk of this high frequency subgroup:

> There's usually another reason or a secondary offence which is why the police were called. It's pretty rare that we deal with somebody strictly on a mental health issue. Substance abuse is common. I would go even as far to say that half of our work is connected to a substance abuse or mental health issue. That's not to say that they are sectionable [sic] but that there's clear indications of mental health concerns.

Other participants provided a more generic demographic description to characterize this subgroup. These descriptions went beyond CCD to include lifestyle characteristics that

pertain to housing and general well-being, and the challenges these may have on enabling the patients to easily access services in the community. As Participant 20 stated:

> Generally speaking, I don't tend to see people who are well-off. Because they have other resources to get into private clinic or private treatment. I generally work with the ones who are on probation or bail and struggling. They are either homeless or they've got a residence but usually not people with any kind of amount of money. They are usually adults…so between 18-35ish.

Some members of the 'heavy user' subgroup of PwSMI were highly mobile. Public transportation and other forms of mass transit appear to be locations where police contact are more likely to occur. Participant 12 explains:

> I would say wherever you are on the Sky train line [light rail system], I mean people with mental health issues are likely to use the system to get around, that's their mode of transportation so you run into them every day. I've been in [area X] for four days, this is my fourth day, and I've probably dealt with a mental health call 6 times this week. In some areas I would say that 90 percent of our clients have some form of mental distress.

The profile of frequent users of police services in a catchment area may not be generalizable to other jurisdictions with a different policing/healthcare make up. What is likely to be more comparable is the general sense of the poor relationship this subgroup has with both criminal justice and healthcare service providers. The cause is not necessarily that of workers in their respective systems, but the availability of appropriate resources and barriers to collaboration between service providers. The manner in which the current system is structured often does not meet the current demand needed to treat this group of patients. A lack of adequate service and disconnection between agencies may lead to some members of the PwSMI population to fall through the cracks of the system. Arguably, the most serious outcome of a lack of co-ordinated service can result in extremely violent acts committed by PwSMI whereby post-event inquiries may highlight a rich history of gaps in mental healthcare service, referrals, and follow-up (Shuchman, 2007). As Participant 4 explains, this subgroup of habitual users of police services may be at a heightened risk:

> The system is overwhelmed with files. So it's kind of a revolving door theory: you bring them in and the doctor looks at them and spends about 5 minutes and says 'no, you're not enough. You're on your way. You're free to go.' So then when we leave, we don't get to know what

> happened to him because of privacy rights. I can't go back and say 'can I see his records?' Confidentiality for the patient is a barrier. We can't access any information so we rely on the *Mental Health Act* or the *Criminal Code* to get them the help they need.

2.4.2. Data management

The third main theme suggests that the spectrum of police interactions are, generally speaking, collected, stored, and retrieved within the primary RMS for police data is commonly known as Police Records Information Management Environment of British Columbia (PRIME-BC). In this RMS, like many other police RMS, all calls-for-service that result in a police response are documented. However, given the various types of calls to which the police will respond and the spectrum of 'crises' that underlines all calls-for-service, the RMS data may yield a wide array of estimates of the quality and quantity of calls-for-service with PwSMI. For example, estimates that focus solely on crises interactions will likely be conservative, though highly accurate. For example, the application of the MHA is the most direct call to mental illness that exists in the RMS. However, because of the strict requirements listed under the MHA, estimates of crises interactions may be conservative. Counts of non-crises interactions are more broadly categorized as they lack the necessary legislative underpinning and definitional support. As such, though these non-crises interactions may in fact be caused by an underlying mental illness, they should be considered as a more liberal estimate of mental illness as the reliability of 'mental illness' is not overt. However, it is important not to overlook these (and grey area) interactions as their total volume is likely to exceed that of crises interactions alone.

In the case of RMS data, mental-illness information can be identified at the event level and/or the subject level within fixed or fillable fields. That is, a single event may include one person or more than one person may be involved. Events that are directly associated with mental illness may be dealt with under the MHA. Other events that may have a link to mental illness are suicide calls and missing persons. At the subject level, Emotionally Disturbed Person (EDP) is likely to be associated with a mentally ill person. Fixed fields at the event and subject level may not capture all of the PwSMI data though additional text narratives and templates assigned with specific events may improve the accuracy of the estimation of the size of the PwSMI found within the RMS.

Improving data collection and management

Participants also highlighted methodological developments that police services could implement to strengthen data collection and analysis of population trends for PwSMI. Some police agencies suggested that highlighting or 'flagging' all calls that presumably fall anywhere on the 'mental health risk assessment spectrum' was an effective method to ensure that, regardless of the severity or level of crisis, that the behaviour of at least one subject in a call would at least be initially identified as being associated in some way with mental illness. In an effort to improve data collection, recently (within the past 12 months), police agencies have adopted a flagging system within the RMS where police officers are:

> Supposed to put in 'M' in the study flag to indicate if every call was mental health related or not. You flag the file which is the other issue too. If you have multiple people on the file, you don't necessarily know, without reading it, who was mentally ill. Hopefully in the synopsis it would indicate who the flag was referring to what the indication was. (Participant 10)

The challenge for police here becomes event-specific rather than a patient issue. Some members felt uneasy with labelling a subject as EDP or a suicidal patient if there was not enough evidence to support this claim. As participant 17 explains, police officers tend to be more conservative when applying an EDP label:

> Our policy is, if we go to a call, and police aren't clinicians, but if we observe somebody who appears to have a mental health disorder, or exhibiting signs of mental illness and is acting erratically and appears to be a risk to themselves or others, then we apply EDP. If we go to a call and the person is saying 'I know Martians are coming and I'm going to wear this tinfoil hat,' but that they calmly tell you this, that is not an EDP.

Several participants suggested that to improve on flagging systems or EDP designations, free-flowing narrative fields within the RMS system could be explored. More specifically, written synopses, narratives, and other attached forms about these files (as well as others) may provide a more complete picture of the call as they are not restricted by pre-defined data fields where data is captured in a 'yes/no' or other categorical format. Analytic approaches to this data source could be framed to reverse engineer the PwSMI population through text-based or linguistic analysis. Some police services and scholars have used these techniques in the past to analysing data associated with criminal activity (Chau, Xu, & Chen, 2002). For mental health data, the

data mining field known as entity extraction may be used with text-based data to identify PwSMI as well as other persons involved in a call, along with other characteristics surrounding the event (Chen et al., 2004). This concept of reading a patient's history of narratives within the RMS is not new to policing or police analytics. However, increasing the volume to the population level is likely beyond the capacity of most police agencies in Canada as this may require advanced computational techniques such as machine learning techniques and other advanced algorithms (Yanna & Kayaalp, 2013).

In terms of enhancing the existing data, some participants suggested additional technological advancements and other initiatives to improve data quality and to reduce the paperwork that the police need to complete. One area where this improvement is needed is during the completion of the paperwork for a S.28 MHA apprehension. Procedures 6-12 in Figure 2.2 highlight the various steps police officers are required to move through as they bring a patient into the ED for assessment. In British Columbia, the narrative for an apprehension requires the officer to complete multiple sets of paperwork and to verbally convey information to medical staff several times within the ED. This was certainly a point of concern for some participants as there is always the potential of misinformation being shared with healthcare workers. Reducing and/or improving the conveying of information to the ED may be resolved through technology. The recent work of Pizzingrilli and colleagues (2015) highlights that a mobile iPad application can be used to expedite the secure transfer of information from police services to psychiatric emergency services within the hospital.

Education and training was brought up as a potential solution to improving the quality and quality of data within the RMS system. Here, the training modules could be designed to ensure that all persons who handle the data—ranging from front-line officers to civilian analysts—all have a common definition of what constitutes a file that involves mental illness. Developing a provincial/state-wide standard ensures that there is some degree of consistency both within and between police agencies. Participant 13 highlighted:

> We are not all trained as best as we could be… [but] over the last few years we've got a lot more courses on how to deal with mental health issues and crisis intervention and how to calm people down and stuff. I think it's good. I know when it [the training] first came in, you know typical policeman, oh this is bullshit but now it's better.

Regardless of whether a standardized approach to data collection and analysis emerges, additional training for all who are involved in data collection and management would be useful. For instance, some police officers, such as those with limited experience working with vulnerable population may lack the necessary assessment training and/or access to test instruments. Additional training and education could be provided to help police officers differentiate PwSMI from non-PwSMI, improve the transfer of vital information to the appropriate health sector, and ultimately to increase the efficiency of both police and emergency mental healthcare. Examples of these various components have recently emerged in the literature. For example, experiential training programs that involve interactive simulations have been found to increase police officers' ability to recognize mental health issues, their efficiency in dealing with PwSMI, and decreased their likelihood to use a weapon or other physical interactions (Krameddine et al., 2013). Risk assessment instruments exist for various purposes and have emerged from different police jurisdictions from around the world. For example, the Brief Mental Health Screener (BMHS) is intended to help police officers identify PwSMI and assist in communicating their observations to local health-care professionals (Hoffman, 2013). In England, risk assessment tools have been developed to help police custody sergeants determine the needs for PwSMI who have been detained within police cells as well as to improve on the pathway for referral for these patients (Noga, Walsh, Shaw, & Senior, 2015).

Moving beyond improving the data for everyday use in policing, to a more analytical/background lens, there are other methodological advancements to studying the intersection between police and PwSMI that may be of use for this topic. Victimization surveys (Perreault, 2015) may be used to generate a comprehensive picture of all types of police-PwSMI interactions as some of the informal interactions may not be captured in the RMS. Results from this type of survey could be used to develop better tools to generate more accurate police and health statistics as it is reasonable to suggest that at least some mental health crises will not be reported to the police or the healthcare system and be processed in some other manner. Household and business victimization surveys may be useful at collecting data on these informal/non-RMS data points. To further triangulate and extend the RMS data, previous research highlights that there is added benefit in conducting in-depth surveys/interviews from PwSMI (Brink et al., 2011). Such an initiative would be of great value in enhancing understanding of

police interactions with PwSMI, particularly in relation to the number of contacts and the nature of these interactions over time. Another option that may be of use for police analytic services is the linking of their data with healthcare data to verify and validate the RMS results. This procedure has been used in previous research to profile a sample of police presentations to a single ED via healthcare records (S. Lee, Brunero, Fairbrother, & Cowan, 2008). With five municipal police forces, 11 RCMP detachments, and the regional Transit Police Service contained within the Fraser Health Authority, it is not difficult to see why communication between the numerous police forces and other health authorities that operate in Metro Vancouver can be challenging[3]. Some scholars have suggested that provincial privacy legislation may make the sharing of pertinent information between police and health agencies exceptionally difficult (McCann, 2013). Understanding how many persons are contained within both the police and healthcare system and the numbers of repeat users would allow for a more complete understanding of PwSMI that cycle between the two services let alone within each service.

2.5. Conclusion

Similar to other studies in this area, the results from this study, suggest that criminal behaviour in PwSMI represents only a fraction of their involvement in the CJS (Vaughan et al., 2016). This paper advances the literature on the interaction between police departments and PwSMI as it qualitatively inspected the totality of police work that is involved in this domain. Previous research has tended to focus on small subgroup of 'heavy users' but have often neglected their non-criminal contacts and more importantly, overlooked the police interactions with the remainder of the population of PwSMI. To more accurately assess this range of police work, future policy development should consider the entire spectrum of police work. High-risk calls often capture the attention of media outlets, especially when PwSMI are involved in a fatality. And although these

[3] In addition to the Fraser Health Authority, three additional health agencies operate either within the same catchment area, or provide neighbouring services. For example, Vancouver Coastal Health is the neighbouring health authority to the west of Fraser Health. Vancouver Coastal operates in the City of Vancouver, Richmond, as well as along up the south coast to more northern areas like Squamish and Whistler, British Columbia. In addition, the Provincial Health Services Authority operates throughout British Columbia to provide specialized healthcare programs like the BC Cancer Agency, BC Children's Hospital, and oversees the BC Ambulance Service. Lastly, the British Columbia First Nations Health Authority also provides healthcare services for BC first nations within the Fraser Health catchment area.

incidents are important to document for creating, amending, and repealing policing policies, there are many other police incidents and programs already in existence that receive much less attention. It is the lower-risk calls-for-service that may be as critical to reducing police calls-for-service as well as improving the well-being of patients. These low and grey area calls provide police services with an opportunity to use problem-solving techniques and other discretionary practices such as a referral to a community organization to connect a patient to a service that addresses an underlying need for the patient. Mental health liaison officers are crucial to making these connections with community stakeholders in an attempt to help direct the patient to the necessary services before he/she decompensates further, their risk level increases, and they fall through the cracks between service providers.

Considering this spectrum of police work with the PwSMI population is vital to assisting the heavy users of police and ED services. By volume, they represent a mere fraction of the total PwSMI population. However, heavy users represent a significant proportion of police work and can comprise of the bulk a mental health liaison officers' caseload. Heavy users are likely to be struggling with multiple psychosocial challenges which often means one service provider cannot assist with all of their needs. Attempts to identify these patients early on in their police contacts linking this knowledge with other service providers such as the ED may be vital to preventing the unnecessary use of police services in the future.

The current study is not without limitations. Although the sample of participants covered all facets of policing in the Fraser Health Authority, it is possible that interviews with other members may have generated different narratives. For example, interviews with workers from Vancouver, a neighbouring city with a large volume of PwSMI that are processed by police and ED services (Pickett et al., 2015), may have generated different results. As such, the challenge facing police officers may not be secluded to one jurisdiction, but the phenomenon may or may not translate to neighbouring communities such as other municipalities, counties, provinces, and states that may also have different policing and/or healthcare structures.

Future research studies should investigate how these various police interactions with PwSMI are captured in empirical data such as police and health records. Such a study would perhaps highlight where data quality that links mental illness to a police

interaction is high (most likely in the high-risk calls-for-service) and where it is low. This area of research may prove to be useful at illustrating a realistic picture of police interaction with PwSMI so that prevalence estimates are more accurate.

Chapter 3.

The importance of gender in the spatial distribution of police interactions involving emotionally disturbed persons

3.1. Introduction

Results from Chapter 2 highlight that police work that police response to PwSMI involve a wide array of situations. Whether it is an interpersonal offence, property crime, or other criminal event, there is no argument that criminal investigations may consume a copious amount of resources when the accused is mentally unwell at the time of the incident. Though the focus of criminal recidivism highlights some important findings surrounding the variance in the propensity for crime in this population (Fisher et al., 2010), recent research suggests that this type of police-work represents only one component of the spectrum of police-PwSMI interactions (Livingston, 2016; Teasdale et al., 2014). For instance, in non-criminal cases, other policing tasks may include finding temporary shelter, transportation to a medical facility for treatment, or exercising a warrant for a court-ordered mental-health assessment. In some jurisdictions, local health agencies are unable, unwilling, or unlikely to provide appropriate services on an immediate basis (Adelman, 2003) that may further exacerbate the need for police resources.

The study of both criminal and non-criminal police-PwSMI interactions is imperative to building an empirical foundation that best reflects the true scope of police work in this area. Furthermore, a holistic approach theoretically produces the most accurate foundation to create, amend or repeal existing policies and practices. A significant challenge in broadening the policy focus from effective subject-specific policing initiatives such as mobile crisis teams (Kirst et al., 2015; R. L. Scott, 2000) to a larger cohort of patients is recognizing that the PwSMI population is not only habitual users of police services, but other services as well (Akins et al., 2016). The lack of funding in this area of policing often means that policies focussing on small subsets of the population will have pragmatic implications. However, there is little evidence to

suggest that the broader population of PwSMI who interact with the police less frequently will benefit from additional policing measures (e.g., additional training).

In recent years, scholars began to investigate police response to PwSMI through a broader lens (Boulton, McManus, Metcalfe, Brian, & Dawson, 2017; Livingston, 2016). Several studies have expanded this focus to consider geo-spatial patterning. These studies indicate that police response to PwSMI clusters into specific geographic areas that can be as narrow as the micro spatial/street segment level and/or relates to their routine activities (Vaughan et al., 2016; C. White & Weisburd, 2017). To a certain degree, one should be able to predict which PwSMI interact with the police as well as where events occur. For the current study I consider all types of contact with PwSMI—criminal, noncriminal, and events where they were apprehended under the MHA and test if the spatial patterns differ by event type while controlling for the gender of the patient. A study of these three interdependent factors—space, event type, and gender—contributes to the literature by providing empirical evidence to predict the location of interactions between PwSMI and police, the type of call-for-service, and the odds of the patient being male or a female.

3.2. Background

3.2.1. Gender

Much of the extant criminological and psychiatric literature focuses on men, or includes samples that combine both men and women (Gravel & Beland, 2005). Correctional studies are particularly susceptible to this differential because, according to Michalski (2017: 13)

> Women serve shorter sentences and are proportionately more likely to be incarcerated for property and drug offences, whereas men… display higher rates of schizophrenia and other psychotic disorders… [and] have higher rates of violent crime that include robberies, assaults, and sex crimes. Incarcerated females are more likely to have experienced homelessness, serious mental disorders, substance abuse, trauma and prior victimization compared to their male counterparts.

For police interactions, the proportion of incidents tends to be higher in populations of men (Becker, Andel, Boaz, & Constantine, 2011; Brink et al., 2011; Charette et al., 2011; Constantine, Robst, Andel, & Teague, 2012). The event or police

interaction type may be the most useful factor in explaining the differences between men and women. According to Crocker et al. (2009), women and men living with mental illness are 18.3 and 12.6 times more likely, respectively, to commit a violent offence in comparison to their non-mentally ill counterparts. Recidivism rates also show that men (55%) re-offend more frequently than women (35%). Some studies have gone as far as highlighting risk factors that may increase the likelihood for criminal involvement for both genders. Becker et al. (2011) extends this comparative research by studying the longitudinal odds of recidivism and the predictive risk factors that may increase the rate of re-arrest for women and men with mental illness. They highlight that supportive housing, the age of the patient, and the underlying mental illness and treatment usage may explain lower arrest rates in women. However, it is important to note that many of the risk factors for women are also significant for men. Notwithstanding, men have higher re-arrest rates, and involuntary psychiatric examination and homelessness further increases these odds for recidivism.

Men tend to have more non-criminal interactions with the police. For instance, studies have shown that men are more likely to be brought to an ED by way of state mental health legislation that allows police to apprehend and transport a patient (Al-Khafaji et al., 2014). Victimization is often substantially higher in populations living with mental illness (Silver et al., 2005), with rates of violent victimization approximately 11 times higher than that in the general population (Teplin et al., 2005). Other studies highlight that sexual victimization is more likely to occur in women where men are more likely to be victims of a physical interaction (Goodman et al., 2001). Regardless of gender, there is high degree of vulnerability to various forms of victimization in PwSMI (Hiday et al., 2001), particularly in vulnerable settings such as psychiatric/hospital settings (Cascardi, Mueser, DeGiralomo, & Murrin, 1996). Unfortunately, the knowledge of factors that impact victimization between the genders in policing contexts is limited.

Outside of the traditional criminal justice and forensic narratives, a substantial amount epidemiological research on mental health highlights differences between the genders (Emslie et al., 2002; Kidd et al., 2013). Psychiatric diagnoses are likely to differ between the genders. For example, women are more likely to have a diagnosis of anxiety and insomnia (Freeman & Freeman, 2013); moreover, of those who have been institutionalized, women have much higher rates of depression, bipolar disorder, and rates of drug abuse (Alleyne, 2006). Secondly, there are important differences in help-

seeking behaviour, with women more likely to seek out treatment services in the community (Addis & Mahalik, 2003; Kessler, Brown, & Broman, 1981). Lastly, because women predominantly have multiple roles and/or competing interpersonal and social demands, this may lead to additional strain that manifests in the form of depression, anxiety, obsessive compulsiveness, discomfort, anger/hostility, and dissatisfaction (McBride, 1990).

Furthermore, researchers suggest that women have less access to material supports that foster health and mental well-being. For example, women are more likely to be single parents, widowed, be unemployed, work in positions that are of a lower status, and have lower incomes (Denton & Walters, 1999). The importance of social support and their relationship to health cannot be overstated: regardless of gender, the risk of death is twice in high in adults with fewer social ties compared to adults with a greater number of social ties (Berkman & Syme, 1979). Women tend to have larger social networks, increasing the opportunity for the exchange of social and health relevant information with confidants (Umberson & Karas Montez, 2010). Despite the social and economic challenges, studies have shown that women are more likely to seek healthcare (when available) in response to illness and have overall more positive attitudes to psychiatric services compared to men (Leaf & Bruce, 1987). Such findings lead some to argue for gender-specific programs recognizing that gender may play a significant role in how well a patient responds to a care plan and/or prevention programs (Kulkarni, 2008). These differences in diagnoses, help seeking behaviours and social factors may be, in combination, significant at predicting differences in routine activities between the genders of PwSMI.

3.2.2. The environment

The environment is another important determinant of mental health (Faris & Dunham, 1960; Silver, Mulvey, & Swanson, 2002), with the social quality of the neighbourhood environment being more important for both mental and physical health in women (Molinari, Ahern, & Hendryx, 1998). More specifically, Cummins et al. (2005) found that neighbourhoods with poor social integration and social cohesion across the neighbourhood, but not within the family, negatively affect the mental and physical health of women, as did a poor physical environment (e.g., waste, fumes); moreover, between-neighbourhood differences significantly affect women but not men (Molinari et al., 1998).

On the other hand, occupational opportunities tend to impact men more than women. Thus, the vulnerability of the local environment for mental and physical health may have gender differences, as may their exposure to these vulnerabilities.

Along with the general socioeconomic characteristics of neighbourhoods being crucial for mental wellness, a lack of stable housing often amplifies the likelihood for police contacts with PwSMI (Roy, Crocker, Nicholls, Latimer, & Ayllon, 2014). At the neighbourhood level, Krishan et al. (2014) identified two important factors. First, neighbourhood characteristics—income, stability, and proportion of immigrants—did not influence the likelihood for referral to services/transportation to a designated treatment facility, arrest, and use of force--three common forms of police work with PwSMI. However, the second finding was that neighbourhood factors did matter when it came to who initiates the call, the potential cause to the call (substance use versus mental illness), and that police may make more referrals for transportation to mental health services in poorer neighbourhoods that lack available services. Such a finding reiterates that access to these services is vital to providing mental health diagnoses, acute treatment, and community-level mental health services to ensure the monitoring of patients is consistent throughout their care plan in comparison to having the police and the CJS provide access to these services.

At a more granular level of analysis, research highlights that there is the potential to highlight the spatial patterning of police contacts involving PwSMI. Vaughan and colleagues (2016) found that not only is there a higher degree of spatial clustering for EDP, a proxy for PwSMI, calls-for-service in comparison to non-EDP calls, but that EDP calls take place in substantively different locations in comparison to all other police contacts. A limitation in this study was that the sample of EDP is homogenous and not gender specific. This limitation is crucial as existing research suggests that the spatial patterning of calls-for-service involving PwSMI may differ between men and women.

3.2.3. Aim of the chapter

The aim of the current study is to build on existing research to explore the intricate and highly complex relationship between gender, the environment, and incidents where PwSMI interact with police services. This study differentiates police contacts with PwSMI by classifying interactions as criminal, non-criminal, and mental

health-related. I then compare how these classifications may or may not cluster in space relative to the gender of the subject. In line with recent developments in the crime at places literature that emphasizes the need to analyze phenomena at disaggregate spatial scales of analysis (Andresen & Linning, 2012), this study seeks to address three research questions:

1. When PwSMI do interact with police, do the types of calls-for-service—criminal, non-criminal, and MHA calls-for-service – occur in spatially distinct areas?

2. Do the macro locations of criminal events, noncriminal events, and MHA calls-for-service differ between males and females?

3. Do the micro locations of criminal events, noncriminal events, and MHA calls-for-service differ between males and females?

3.3. Methodology

3.3.1. Context

The police incident data in the current analysis were obtained from the Surrey, British Columbia detachment of the RCMP and the Metro Vancouver Transit Police Service who also operate within the City of Surrey. Surrey is a medium-sized municipality within Metro Vancouver that is bordered by the Fraser River to the north, and several the City of Delta to the west, the City of Langley to the east, and the United States to the south. Surrey was incorporated in 1879, covers an area of just over 316 square kilometers (122 square miles). As is common in other jurisdictions, residential development in Surrey follows along the various major road networks that connect six communities: Fleetwood, City Centre/Whalley, Guildford, Newton, Cloverdale, and South Surrey. Found in the North West section of Surrey, Whalley is the most densely populated portion of Surrey and contains Surrey City Hall and the city's main library, a major shopping mall, hospital, post-secondary institutions, and a light rail system provides residents with rapid transit access to neighbouring municipalities. In 2014, Surrey had an estimated 2014 resident population of 507, 580 with the population split almost 50/50 between males and females (City of Surrey, January, 2017; Statistics Canada, June, 2017). In addition, the ethnicity make up is roughly equal between visible minorities (with a substantial proportion identifying as South Asian) (46%) and groups that do not identify as a minority (54%) (Statistics Canada, January, 2015). Through

2011-2016, Surrey experienced a population increase of roughly 10.6%, making it one of the fastest growing areas in British Columbia. To meet the housing demand, the city has invested heavily in residential and commercial development with significant investments in the Whalley area.

Of the two police agencies that operate within Surrey, the RCMP, provides the majority of the police services through contract municipal police service. With over 1,000 police officers, volunteers, and civilian staff, the Surrey is the largest municipal contract for the RCMP (Surrey RCMP, July, 2017). With an overall policing philosophy that is community-based, intelligence-led, and integrated, the Surrey RCMP delivers policing services through outreach, intervention, and enforcement initiatives. An example of a proactive intervention and prevention program is the Surrey Mobilization and Resiliency Table (SMART) which combines police and community resources to help people who are at the most risk of harm before the police are called for assistance (Reid, April 14, 2016). The specific policies and procedures on how the RCMP will respond to a PwSMI call-for-service will depend on the event itself (e.g., the number of police officer units to respond to an event). However, in British Columbia, the MHA directs police officer discretion in a substantial number of interactions including enforcing warrants to return a patient to a designated mental health facility as well as the conditions needed to satisfy a S.28 involuntary apprehension. Metro Vancouver Transit Police officers are designated provincial police officers and provide comparable policing services to their RCMP counterparts. However, the mandate of Transit Police focuses being predominately along the large transit network that exists in Surrey and throughout the greater Vancouver Area. Though the RCMP and Transit Police are independent police services, they do have several collaborative programs such as the network of Mental Health Police Liaison officers. Lastly, training programs for improving police response to PwSMI for both police services are comparable with “curricula increasing likely to be multifaceted with a variety of teaching methodologies (e.g., lectures, videos, online resources, role playing and scenarios, simulations and written resources)” (Coleman & Cotton, 2014: 6). Following the recommendations of a recent inquiry, there has been an increase in the delivery of crisis intervention and de-escalation training to further improve police response during a mental health crisis (Braidwood, 2010).

3.3.2. Data

The event data in this study represent police incidents with PwSMI over a three-year period, 2010 – 2012. I chose to proceed with a three-year period to avoid analyzing any particular year of data that might contain an aberrant spatial pattern. Extracting the data for this study involves a two-step process of that involves SQL queries from a retrospective database in a secure laboratory at the Institute of Canadian Urban Research Studies at Simon Fraser University. The first stage involves identify all individuals who had come into contact with the police during the three-year period where they were identified as an 'EDP' subject[4]. A second stage in data extraction then links these subjects to their individual events. The resulting data set consists of 2807 subjects (1538 males and 1269 females) that were involved in 4341 police events. Because the event-level data covers dozens of different police interactions, I elected to aggregate the event contact to: MHA, criminal incidents, and noncriminal incidents. Descriptive statistics of the number of events within each call type, differentiated by gender, are presented in Table 3.1.

Table 3.1. Descriptive statistics of the number of calls-for-service classified as MHA, criminal, or non-criminal involving an EDP (2010-2012)

Call Type	Gender		Total
	Male	Female	
MHA	1696	1740	3436
Criminal	323	225	548
Non-Criminal	184	173	357
Total	2203	2138	4341

Note: $X^2(2) = 17.46$, $p < .001$.

Although point-event data are analyzed below, I report results aggregated to the dissemination areas defined in Statistics Canada's 2011 census of population, n = 592. As defined by Statistics Canada, dissemination areas are smaller than census tracts, containing a residential population between 400 and 700 persons, comprised of one or

[4] The subject identifier 'EDP' is entered into PRIME-BC at the end of a call by the responding police officer and describes a subject/patient as appearing to be mentally unstable or who might pose a threat to an investigator or others during a call-for-service. I recognize that EDP may not be the most appropriate reference to describe PwSMI (Rose, Thornicroft, Pinfold, & Kassam, 2007). However, in the absence of other reliable indicators in police data, EDP is a useful from a research perspective as it aides in the identification of a health concern within a criminal justice database.

more blocks—this census unit is similar in size to the census block group in the United States Census.

3.3.3. Testing methodology

Macro spatial units

In addition to discussing some descriptive statistics of the data, I test for the similarity of spatial point patterns using Andresen's (2009) spatial point pattern test. This spatial point pattern test identifies the degree of spatial similarity between two or more sets of spatial point patterns. The process of the spatial point pattern test is as follows: first, identify one point-based data set as the base (MHA incidents, for example), then calculate the percentage of points within each dissemination area; second, the other point-based data set is deemed the test data (criminal incidents, for example), and randomly sampled (with replacement) for 85% of the test data in order to calculate the percentage of points within each dissemination area; third, repeat this sampling process 200 times in order to generate a nonparametric confidence interval; fourth, generate a 95% nonparametric confidence interval by calculating 200 percentages of points within each dissemination area, ranking them, and removing the top and bottom 2.5%; fifth, if the value within a dissemination area for the base data set (MHA incidents) falls within the confidence interval, that dissemination area is deemed similar; and sixth, repeat step five for all dissemination areas.

The output of the spatial point pattern test has two parts. The first part is a global index, S, that ranges from 0 (no similarity) to 1 (perfect similarity). This S-Index represents the proportion of dissemination areas (in the current context) that have a similar spatial pattern within both datasets. Similar to previous work that has uses this test (Andresen, 2009; Andresen, 2016), I use .80 as a cut-off value to indicate similarity between two spatial point patterns. The following formula highlights how one calculates the S-Index:

$$S = \frac{\sum_{i=1}^{n} s_i}{n}$$

where s_i is equal to 1 if the pattern of two datasets are similar (0, otherwise) and n is the number of areas. The S-Index, therefore, represents the percentage of areas that have a

similar pattern. The second part of the output may be mapped to show where statistically significant differences in the spatial patterns occur. A graphical user interface (GUI) was developed for the application of the spatial point pattern test that is available at: https://github.com/nickmalleson/spatialtest. I used this GUI for performing all of these tests. I use the spatial point pattern test across four dimensions: MHA events, criminal events, noncriminal events, and gender. This results in a total of 13 pairwise tests of similarity.

Micro spatial units

Following the spatial point pattern analyses, I use the street segment, or the portion of each street that falls between two intersections, to identify the spatial concentration of the micro level patterning of PwSMI calls-for-service. This unit of analysis has become a common choice for identifying spatial concentrations of PwSMI and it shows the degree of concentration (or lack thereof) with a high degree of precision. To perform such calculations, each call-for-service was geo-referenced to the street segment it was geocoded to. Using this information, the number of PwSMI events were counted for each call type, and then further differentiated by gender, to make a number of calculations regarding spatial concentrations, described below.

Micro units of space were also tested at the dwelling level for both genders using a difference in proportions z-test. The data for this test are contained within the event-field of the existing dataset. This field outlines the location type of each call–for-service. For this study, locations were aggregate micro spatial units to four location types: private and commercial residences (e.g., apartments, hotels), business and public buildings (e.g., gas stations, hospitals), public spaces and transit lines (e.g., park spaces, subway lines), and unknown.

3.4. Results

There was a total of 1538 male and 1269 female subjects in the study. For males, the count total for each subject ranges between 1 and 23 events over the time period of the study. In contrast, the counts for females ranges between 1 and 46 events. Research suggests that a small proportion of PwSMI have a high number of contacts with the police (Akins et al., 2016). The results from the current study support and

extend this conclusion. For example, the top 5% of the most active males result in 18% (n = 402) of their 2203 events. On the other hand, the top 5% of the most active females comprise of 29% (n = 621) of the 2138 events. These results confirm that a large number of calls-for-service with PwSMI concentrate in a small proportion of the population; however, there are important gender differences within these figures. The data suggest that subgroups of females are more likely to have habitual or repeat contacts with the police in comparison to males.

Table 3.2 provides descriptive statistics of the counts of events disaggregated by call type and gender, as well as the percentage of dissemination areas within the city that have any event, the percentage of dissemination areas that account for 50% of the events. The percentage of dissemination areas with events is a measure of the prevalence of these various police incidents, and the percentage of dissemination areas that are necessary to account for 50% of the events is a measure of concentration—if any set of events uniformly distributes across the municipality, it would take 50% of dissemination areas to account for 50% of the events.

It is clear from Table 3.2 that the majority of events – almost 80% – are MHA police calls-for-service. This is not surprising given the nature of the sampling, but it shows that as a group these individuals are not a predominantly criminal population that occasionally has mental health issues; rather, it is a population that has mental health issues and occasionally commits crimes. With regard to the gender distribution, men contribute to a little more than 50% of all the events. Females, on the other hand, account for more than 50% of the MHA events, a little less than 50% of the noncriminal events, but less than one-third of the criminal events. As such, any analysis that does not consider females as a distinct population will miss a substantial amount of information regarding PwSMI.

Table 3.2. Counts and concentrations of events, 2010 – 2012.

	Count	% DAs with events	% DAs that account for 50% of events
All events	4341	91.5	13.70
All MHA events	3436	88.5	11.10
All criminal events	548	37.3	4.22
All noncriminal events	357	35.3	8.45
Female events	2138	74.8	10.90
Male events	2203	79.6	11.82
Female MHA events	1740	71.8	11.66
Male MHA events	1696	72.8	12.33
Female criminal events	173	18.9	5.24
Male criminal events	323	26.3	3.89
Female noncriminal events	173	8.9	5.24
Male noncriminal events	184	22.1	6.59

Insofar as prevalence is concerned, MHA events are present in almost all dissemination areas across Surrey. In contrast, criminal and noncriminal events are only present in just over one-third of the municipality. Although the prevalence of MHA events is similar for both males and females, this is not the case for criminal events and noncriminal events. In both cases, location of these events concentrates in fewer locations for females. Turning to the last column of Table 3.2, there is strong evidence for concentrations of all types of events. For all events, only 13.7% of dissemination areas account for 50% of the events. MHA events are similar at 11.1%, but criminal and noncriminal events concentrate at 4.22 and 8.45%, respectively. When differentiating between males and females, there are only minor differences with regard to concentrations; females concentrate slightly more than males for all events, MHA events, and noncriminal events, whereas males concentrate more for criminal events.

To address the second research question of whether or not these concentrations occur in similar locations, a series of spatial point pattern tests are conducted. Table 3.3 displays the results at the most aggregate level from the first three comparisons that refer to whether or not the spatial point patterns are similar between MHA, criminal, and non-criminal calls-for-service involving both males and females. Because none of the S-Indices approach the threshold of .80, which would indicate similarity (Andresen & Linning, 2012), this suggests that the spatial point patterns of these three comparisons are actually quite different, with the locations of MHA and non-criminal calls showing the highest degree of dissimilarity (S-Index = .267). In other words, the locations in which MHA calls-for-service take place by the police appear to be quite different from the locations in which the police respond to non-criminal contacts. Of these three

comparisons, the locations of criminal and non-criminal calls-for-service appear to be the most similar (S-Index = .706), followed by MHA versus criminal calls (S-Index = .291), although these values still do not approach the threshold of similarity of .80. From these findings, it appears that when police contacts are not gender-specific, the spatial distribution of MHA calls-for-service is very different to those of all other calls-for-service.

Table 3.3. Indices of similarity, dissemination areas, population – MHA, criminal, and non-criminal calls-for service, 2010-2012.

	X1	X2	X3
MHA, X1		.291	.267
Criminal, X2			.706
Non-Criminal, X3			

To examine the spatial distribution of the different types of calls more specifically, a sample of police contacts involving only males was chosen. Referring to Table 3.4, the results are very similar to what is found above insofar as the spatial point patterns for MHA, criminal, and non-criminal calls-for-service involving males take place in different locations. However, it is clear from the S-Index values that the locations of criminal calls are more similar to the locations of non-criminal calls (S-Index = .780) than they are to MHA calls-for-service (S-Index = .472). Similar to the indices of similarity found when I combine the genders (see Table 3.6), non-criminal calls-for-service involving only males are shown to be the most dissimilar to MHA police contacts with an S-Index value of .465.

Table 3.4. Indices of similarity, dissemination areas, males only – MHA, criminal, and non-criminal calls-for service, 2010-2012.

	X1	X2	X3
MHA, X1		.472	.465
Criminal, X2			.780
Non-Criminal, X3			

Table 3.5 displays the spatial point pattern findings for MHA, criminal, and non-criminal calls-for-service involving females only. Overall, a similar trend to that of the male sample is found for the female sample. Specifically, the spatial point patterns of criminal and non-criminal calls also display the highest degree of similarity among the three call types (S-Index = .819). Although this overall trend is similar to what is found with the male only sample, the spatial point patterns of female criminal versus non-criminal calls are statistically more similar because the S-Index of .819 exceeds the cut-off value of .80 (in comparison to what is found with the males – S-Index = .780).

Findings also indicate that the spatial point patterns of MHA and criminal calls and MHA and noncriminal calls are equally dissimilar (S-Indices = .500 and .501, respectively).

Table 3.5. Indices of similarity, dissemination areas, females only – MHA, criminal, and non-criminal calls-for service, 2010-2012.

	X1	X2	X3
MHA, X1		.500	.501
Criminal, X2			.819
Non-Criminal, X3			

Finally, Table 3.6 displays the findings from the spatial point pattern tests that compare whether or not the locations in which males and females come into contact with the police differ when combining all of their contacts together, and then specifically for each of the three types of calls-for-service. It is noteworthy that when gender is the sole focal point, notwithstanding the type of call, it is clear that males and females come into contact with police services in very different locations (S-Index = .336). This finding is also true when testing the spatial point patterns of male MHA and female MHA calls, as they too take place in different locations throughout the city (S-Index = .383). However, this finding is not evident when comparing the spatial point patterns of male versus female criminal calls (S-Index = .780) and male versus female noncriminal calls-for-service (S-Index = .775), where males and females come into contact with the police for both criminal and non-criminal reasons in relatively similar locations. To show these results visually, the mappable output from the spatial point pattern test for each of the comparisons between males and females for all events, MHA, criminal, and noncriminal calls using dissemination areas are shown in Figures 3.1-3.4[5].

Table 3.6. Indices of similarity, dissemination areas, males versus females – all events, MHA, criminal, and non-criminal calls-for-service, 2010-2012.

All events	.336
MHA	.383
Criminal	.780
Non-Criminal	.775

[5] These four comparisons for Surrey are shown because they allow for visual interpretation of the findings for differences among genders for each of the call types examined in the current study. The dissemination area results are shown because they show the greatest visual variation that is easy to interpret.

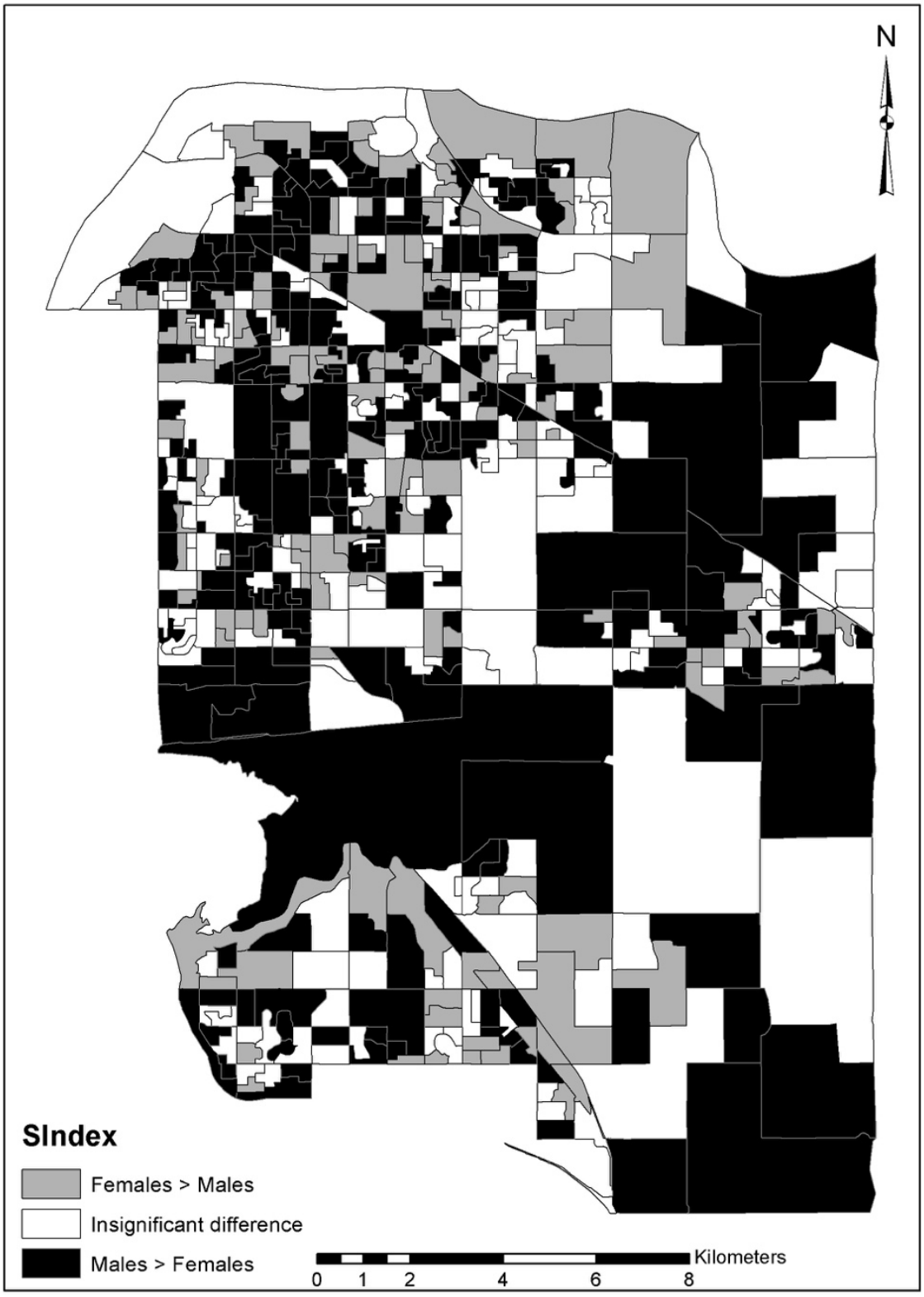


Figure 3.1. Mapped output, all calls-for-service – males versus females, dissemination areas, 2010-2012.

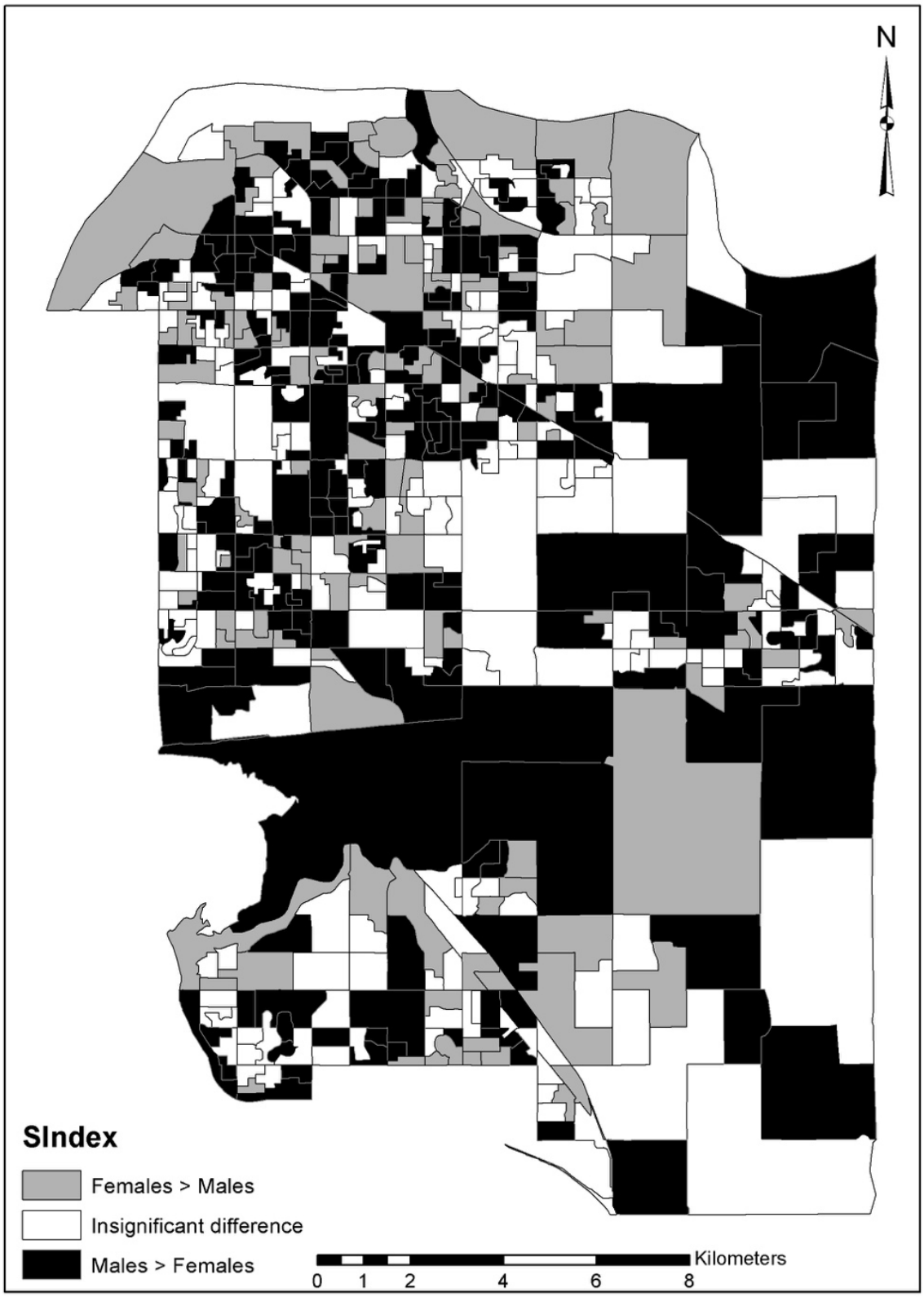


Figure 3.2. Mapped output, MHA calls-for-service – males versus females, dissemination areas, 2010-2012.

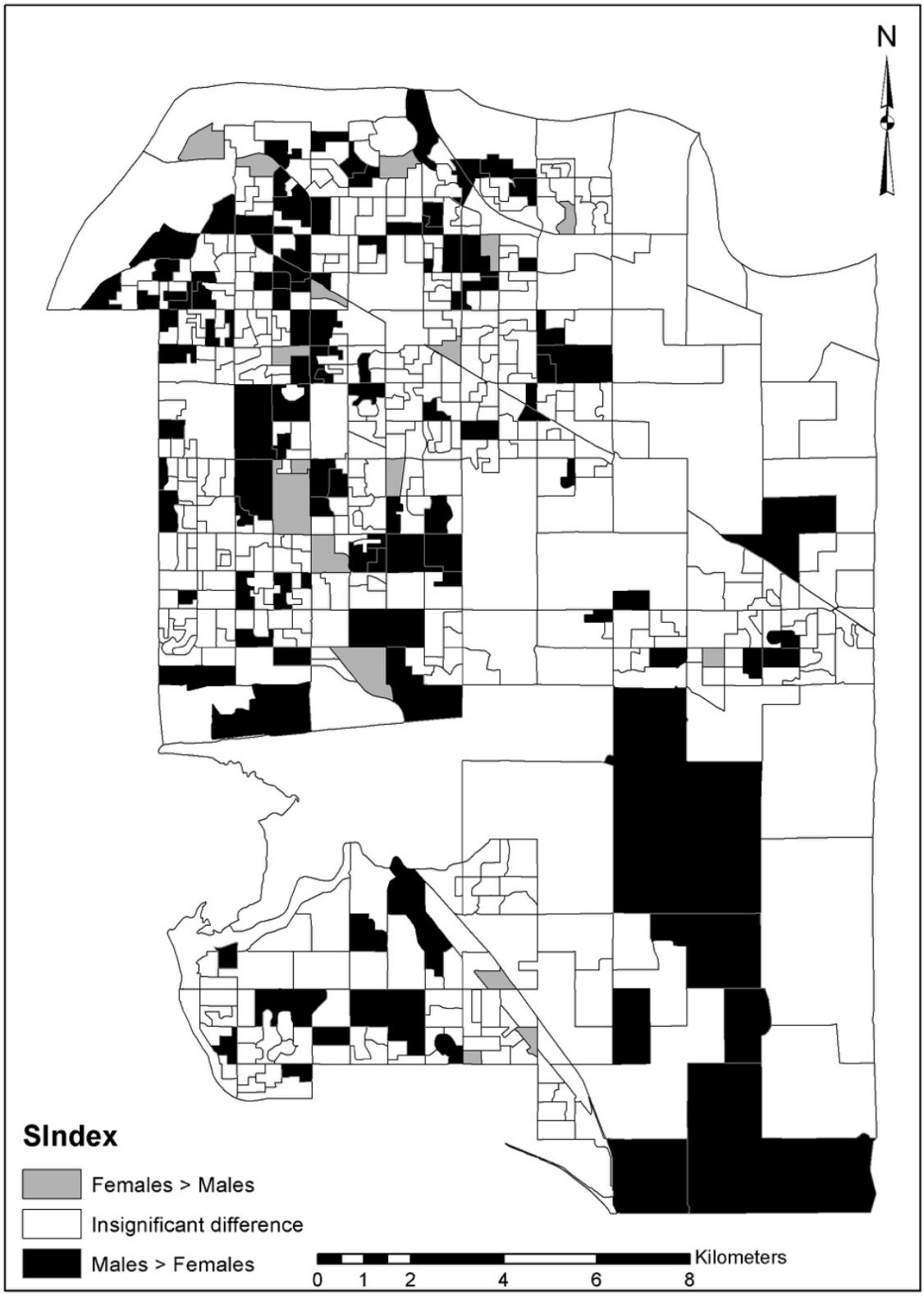


Figure 3.3. Mapped output, criminal calls-for-service – males versus females, dissemination areas, 2010-2012.

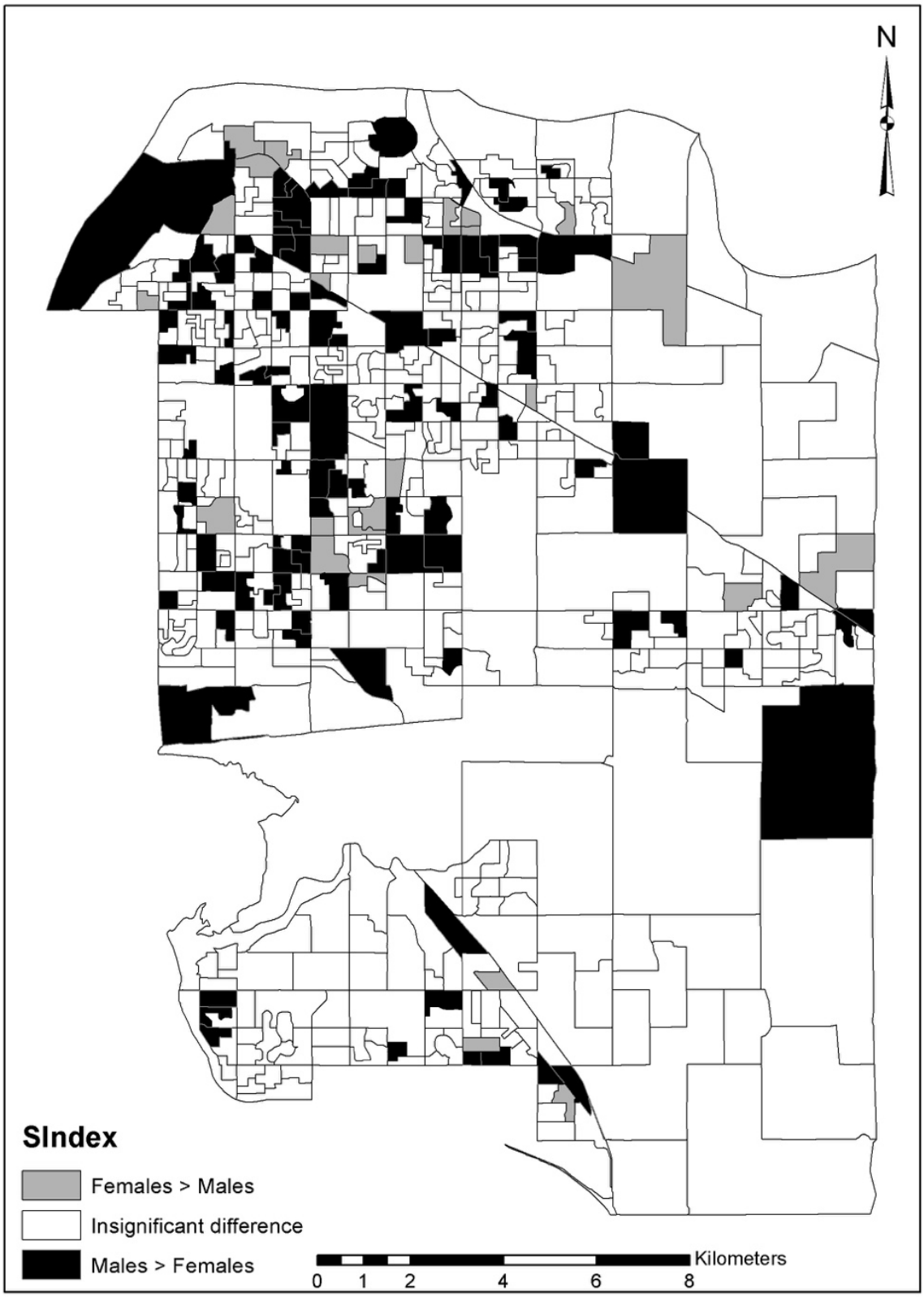


Figure 3.4. Mapped output, noncriminal calls-for-service – males versus females, dissemination areas, 2010-2012.

To address the third research question that asks whether there are differences in call-for-service locations between the genders for the three different call types at the micro level, two sets of calculations were completed. The first set of micro spatial calculations determine if the type of location (e.g., building/land use) of a call-for-service was statistically different between males and females. Results indicate that mentally ill females are more likely to have contact with the police in private and commercial residences ($p < 0.01$), whereas their male counterparts are more likely to come into contact with police in commercial business settings and public buildings ($p = 0.02$). Insignificant differences were found between the genders in terms of calls-for-service taking place in public spaces and transit lines ($p = 0.28$) and unknown locations ($p = 0.92$).

Given the above findings, the second set of calculations determine whether there are geographic differences and evidence of spatial clustering amongst the genders and call types at the street segment level. More specifically, three measures of spatial clustering were examined, with each one measuring a finer degree of concentration: (a) the percentage of street segments that account for 50% of calls-for-service; (b) the percentage of street segments that have any calls-for-service; and, (c) the percentage of street segments with any calls that account for 50% of total calls-for-service. Referring to the first measure, Table 3.7, column a, suggests that a small percentage of street segments account for 50% of all contacts for both males and females (range = .14 – 1.21%). This indicates a high degree of spatial concentration within this city over the 3-years of data. As shown in column b, the second measure demonstrates an even higher degree of spatial clustering for criminal and noncriminal contacts. For example, calls-for-service involving men that were criminal in nature took place in only .93% of street segments. In other words, 99% of the total street segments within the city were free of police contact with PwSMI who were in a crime during the three-year period. Mental health calls for both genders distribute more widely throughout the city, but still show a high degree of spatial concentration. Specifically, male MHA calls occur in 4.48% of street segments, and female MHA calls were slightly more concentrated, taking place in 4.31% of street segments. Lastly, column c displays the percentage of street segments with calls that account for 50% of calls. Findings indicate that of the street segments that experience any PwSMI calls, only 13.81% of them account for 50% of all PwSMI calls. In terms of all male calls-for-service, 17.98% of street segments account for 50% of calls,

whereas for females, the concentration of the street segments increases slightly (15.74%). Given their call volume, MHA calls are of particular concern. Again, it is seen that these calls cluster in space, with a small percentage of street segments accounting for 50% of calls-for-service for males (20.24%) and females (18.71%). However, noncriminal calls are more disperse for both males (42.86%) and females (35.82%).Taken together, these three measures of spatial concentration confirm that in general, police calls associated with PwSMI cluster in space for males and females, and for all call types, females tend to experience slightly more spatial clustering.

Table 3.7. Percent of spatial units accounting for 50 percent of calls.

Call type	(a) Percent of spatial units that account for 50% of calls	(b) Percent of spatial units that have any calls	(c) Percent of spatial units with calls that account for 50% of calls
Both genders – All calls	1.21	8.75	13.81
Males – All calls	.96	5.33	17.98
Females – All calls	.77	4.90	15.74
Males – MHA	.91	4.48	20.24
Females – MHA	.81	4.31	18.71
Males – Crime	.19	.93	20.69
Females – Crime	.14	.65	21.68
Males – Non-crime	.31	.73	42.86
Females – Non-crime	.22	.61	35.82

3.5. Discussion and conclusion

Building upon previous research that uses the spatial distribution of police calls-for-service as a measure to study differences between persons with and without mental illness (Vaughan et al., 2016), the current study uses the same methodology to test for possible differences within a subset of PwSMI that focuses on gender and types of calls-for-service. Overall, the findings of this study further emphasize that PwSMI have a broad range of contacts with the police, the majority of which are fall under the MHA. From a spatial perspective, the findings also highlight the need to differentiate between genders as well as event types. For instance, the results of the z-score dwelling type test as well as the street segment concentrations indicate that females and males encounter police services on different street segments, for different types of events, and within these streets calls-for-service take place at different dwelling/land uses. These findings have implications not only for police services but also emergency medicine, mental health, and substance use practitioners.

The overall findings from this study highlight both within- and between- group similarities and differences when it comes to police interactions with PwSMI. First, considering the similarities, I found the raw counts of police interactions to be comparable between males (2203 contacts) and females (2138 contacts). Such a finding is unique to the literature as it shows that females are just as active as males in terms of coming into contact with police services, while also encompassing all of their police contacts. Previous studies often focus exclusively on criminal recidivism, victimization or other interaction types with the CJS with men dominating the research samples. Despite this, minor differences were found between the genders when it came to specific interaction types. For example, females had 44 (less than 1%) more MHA events than men, and although the counts are relatively comparable, this presents a different finding from that of Al-Khafaji and colleagues (2014) who suggest that men are more likely to be brought the ED by means of state mental health law. I also found that men were 15% more likely have a criminal interaction, which supports the findings from previous research (Becker et al., 2011). Together, these results show the highly complex interaction between police and PwSMI over time. Using descriptive results alone, this information may be beneficial for introductory or initial recruit training for police officers insofar as the educational material should mention that the odds an PwSMI contact with the police will be roughly the same for females as it is for males.

In terms of the within- and between-group differences, the latter analyses reveals that there are substantial differences of where males and females come into contact with police when examining their spatial patterns. Looking first at the macro spatial level, the battery of spatial point pattern tests highlight that police contacts with PwSMI occur in different dissemination areas, with some of the greatest differences existing between the genders for MHA calls-for-service, a finding that is consistent with previous research on rates (Michalski, 2017: 13), and that neighbourhood factors (Roy et al., 2014).

Unfortunately, this study did not include an analysis of the types of factors that exist within each dissemination area in Surrey. Though the results are at the aggregate level, the micro spatial findings offer a useful contribution to the literature. With women in general having different roles in marriage, family and society (Kulkarni, 2008) and that a combination of these roles can lead to additional stress and strain (McBride, 1990) there is no question that mental health can impact men and women differently. The finding that females are more likely to contact police service within a residential setting where as

men are more likely to be found in commercial settings and businesses provides some empirical support routine activities for males and females differ and that mental health crises situations that result in police response may be gender specific. It is important to note that the data in this study does not identify that the micro spatial setting (e.g., home environment) was the immediate cause for the call so I cannot suggest that for example, because women are more likely to be responsible for care of their families, it is these activities that causes mental health crises and thus the call for police service.

These micro spatial gender differences may be of use to training programs for police officers. In addition to traditional lecture style education for police officers (lectures, video, online resources, written resources), simulations and role playing as being a common practice in training police officers to better respond to PwSMI (Coleman & Cotton, 2014; Krameddine et al., 2013; Teller et al., 2006). Future simulation and role playing training programs in this domain may want to contextualize their exercises outside of the classroom and in environments where police-PwSMI interaction is statistically more likely to occur for males and females. Recognizing that each call-for-service will be unique, simulation training program designers may want to build in some of the social determinants to mental health that are gender specific. For example, simulation exercises that account for the known gender differences that are likely to precipitate a police call-for-service such as the underlying diagnosis itself, the social correlates to an illness, and help-seeking behaviour may better reflect the underlying conditions that through their investigation, police officers will inevitably encounter.

Additional neighbourhood-level research is needed to ensure that policy changes align with the needs of the patients who use these services. The efficacy of any problem-solving initiative that uses police services should be measured, at a minimum, by the reduction of police contact and improvement in the wellness of PwSMI. To do so, it is necessary to focus on micro spatial neighbourhood trends to identify problematic streets for MHA, criminal, and noncriminal contacts so that interventions can be appropriately implemented to not only reduce the volume of calls for police services but also improve mental well-being for persons in these areas. Targeting police resources to known crime locations or hotspots is known to be highly effective at reducing crime (Braga, Papachristos, & Hureau, 2014). With the ever evolving role of front-line police officers, this idea of geographically targeting police resources to the known street segments with the highest volume of MHA calls to proactively reduce PwSMI contacts. For instance,

targeting police resources to provide support and information for patients and others in the community and to liaise with local healthcare partners regarding problem areas within the city could be highly beneficial. Fortunately, the Surrey SMART program is designed for police services to not only liaise with the local health authority, but also housing, social services, income assistance, and education programs in the community (City of Surrey, January, 2016). Taken further, SMART program resources could be targeted street segments as has been done in previous research (C. White & Weisburd, 2017) while extending them to vulnerable groups. For mentally ill males, this could be as simple as visiting commercial businesses and public buildings and providing information to proprietors about the existing trends in their area. For females, because their calls-for-service are more likely to occur in residences, police and outreach healthcare providers could enhance their visibility in known street segments with high volumes of private and commercial residences to increase their presence in the community and to provide basic information to community members.

There are several pertinent limitations to this study. First, I did not have the home location for the sample, making it difficult to appropriately implement interventions, especially for females, without knowing whether or not the majority of their police contacts were taking place in their own homes. To rectify this, future researchers should include the home addresses of these individuals to control for their journey from their residence to the location in which they come into contact with police in order to be more precise about the type of intervention needed to prevent future occurrences. Second, a limitation arises from the use of EDP as a subject identifier. The definition of EDP does not differentiate the causality of the behaviour, but is based on the police officer's assessment of the suspect at the time of the event (M. D. White & Ready, 2007). Consequently, some individuals in this study's sample may not have been mentally ill at the time of the event. Future research should attempt to replicate these findings in different cities and countries where the geographies may be different to see if these same trends remain. It might also be beneficial to drill down even further and differentiate subjects by age groups in order to have a more complete picture of the differences and similarities between gender, location, and call-type, and how this information can assist in the future development of reactive and proactive police responses. The inclusion of additional data sources such as aggregate crime trend data, population health records, and place attractors (e.g., the location of mental health

services) would extend the findings to analyse the impact of environmental conditions on where calls associated with PwSMI will take place.

Chapter 4.

Temporal patterns of Mental Health Act calls to the police

4.1. Introduction

Within the environmental criminological literature, theorists have emphasized the role that both space and time play in the occurrence of crime (P. L. Brantingham & Brantingham, 1993; P. J. Brantingham & Brantingham, 1981; L. E. Cohen & Felson, 1979; Cornish & Clarke, 1986). Temporally speaking, recent research demonstrates that criminal events do not occur uniformly throughout the year; rather, the frequency of crime varies across seasons, months, during the week, and time of day according to crime type. Two theoretical frameworks have been used to explain such patterns: routine activity theory and heat/temperature aggression theory. The perspective of routine activity theory is that summer months and the corresponding warmer weather increases the frequency and duration of people being outside of the relatively protective environment of the home. Furthermore, how people interact with the environment is also tied to the 24-hour clock as well as through the day of the week. With a large segment of the population working standard office hours during the week (e.g., 9am-5pm and Monday through Friday), routine activities theory can be used to argue that there will be an increased frequency of motivated offenders and suitable targets in time and space without the presence of a capable guardian. For example, crime can be predicted at the weekly and hourly level such as in the case of identifying where and when areas will be targeted for burglary (Coupe & Blake, 2006). In contrast, the perspective of temperature aggression theory is that increases in temperature lead to increases in frustration and discomfort that lead to increased levels of aggression in (at least some) individuals and sequent violent criminal acts (Breetzke & Cohn, 2012; Hipp, Bauer, Curran, & Bollen, 2004; Williams, Hill, & Spicer, 2015). Although this has been found to the case in crime, research has not yet looked at whether this is applicable to PwSMI.

Despite the large and growing body of literature investigating macro and micro temporal trends in crime, there is substantial variability in different jurisdictions and across crime types. For instance, at the macro level, studies highlight that property crime

increases in the summer months (Cohn & Rotton, 2000), others indicate winter peaks of crime (Van Koppen & Jansen, 1999), and others report little to no seasonality impact (Linning, Andresen, Ghaseminejad, & Brantingham, 2017). At a more micro temporal level, researchers have also examined the relationship between temperature and aggression in sporting events (Larrick, Timmerman, Carton, & Abrevaya, 2011) with subsequent comparative research providing mixed results on this phenomenon (Craig, Overbeek, Condon, & Rinaldo, 2016). Other researchers have looked at the temporal relationship of crime and deviance trends associated with less frequently occurring events like the Olympic games (Andresen & Tong, 2012; S. H. Decker, Varano, & Greene, 2007) and time-sensitive events such as natural disasters (i.e., hurricanes) (Spencer, 2016). Some scholars have even have argued that crime, assaults specifically, is more likely to occur during public holidays (Harries, Stadler, & Zdorkowski, 1984).

The reasons for the conflicting findings of how crime is (or is not) patterned are largely uncertain. However, Landau and Fridman (1993) suggested that they are related to the different ways in which time is operationalized, whereas Yan (2000) considered them to be related to the varying degree of geographical locations under investigation. Other causes to this phenomenon could be related to the crime data themselves (missing data, inadequate counts for statistical tests, et cetera). Notwithstanding these important factors, the data used for temporal studies are of vital importance. For example, if studies only focus on official crime data they would be omitting the potential temporal trends events in non-law enforcement events such as concerns for safety and/or welfare (Boulton et al., 2017) . Furthermore, these non-law enforcement events can result in a significant proportion of police work. For example, some suggest police spend only 10-25% of their time conducting investigations and arresting criminals with the remaining 75-90% of their work related to maintaining order and providing service to the community (Whitelaw, Parent, & Griffiths, 2014). As a result, the temporal nature of non-crimes is important to understand for a wide variety of reasons, not the least of which can be resource allocation. Given the breadth of social welfare work that modern police officers are responsible for, identifying a specific area of police work like the intersection between PwSMI and police is crucial to better understanding the macro and micro temporal trends in calls-for-service, should there be any.

To date, only a handful of temporal studies exist in this domain with most publications focusing on the duration of calls-for-service and often within the context of some form of program evaluation (Heslin et al., 2017; Pizzingrilli et al., 2015; Redondo & Currier, 2003; Szkopek-Szkopowski et al., 2013). In this chapter, I contribute to the temporal study of police activity through an investigation of police calls-for-service that relate to the MHA in British Columbia. These analyses were performed on one relatively large policing jurisdiction in British Columbia over a seven-year period to test the following hypotheses:

1. Mental health related police calls have increase over time on a yearly basis (macro temporal);
2. Mental health related police calls-for-service increase in the summer season and the summer months (macro temporal);
3. Mental health related police calls-for-service increase at the end of the month (macro temporal);
4. Mental health related police calls-for-service increase on the weekends (micro temporal); and
5. Mental health related police calls-for-service increase in the evenings (micro temporal)

These research hypotheses are based on expectations from routine activity theory. Traditionally, routine activity theory is used to explain changes in spatial and temporal crime patterns. However, I consider this theory as instructive here as a guiding framework because although MHA events are non-criminal, one can argue that the events that led to the enforcement of the MHA involve interpersonal contact between the patient and others (e.g., family, friends, police) to which all parties were likely engaged in routine activities as the time of the event. In addition, given the research evidence available (Vaughan et al., 2016) as well as the results from Chapter 3, I have reason to believe that routine activity theory is applicable to explaining not only the spatial distribution of calls involving PwSMI but also the time when these events occur because timing is inextricably linked to space (P. L. Brantingham & Brantingham, 1993; P. J. Brantingham & Brantingham, 1981). Thus, I have at least some reason to believe that routine activities theory is pertinent to understanding the temporal trends of these calls. As a consequence, the direct macro and micro temporal patterning of police responses to patients in crises can be explored and along with the indirect patterning of severe mental illness within a given jurisdiction.

4.2. Related research

4.2.1. Theoretical considerations for temporal patterning of crime and mental health

Cohen and Felson (1979) hypothesize that changes in our collective routine activities impact crime rates, such that increasing the amount of time spent outside of the relatively protective home environment increases the risk of victimization because of increased contact with potential offenders. Although Cohen and Felson (1979) described these changes in routine activities at a societal level (e.g., the increased role of women in the workplace and post-secondary institutions; increased income leading individuals to go out of the home to dine and to engage in leisure activities; and, the economic development of small, light-weight, and valuable consumption of goods), changes in individual routine activities can affect the likelihood of victimization in localized settings as well. Indeed, there is a substantial body of literature that employs routine activity theory to investigate the varying levels of criminal victimization based on lifestyle (Kennedy & Forde, 1990) and across space (Andresen, 2011).

Routine activities tend to change depending on the macro temporal unit of measure. Seasonally, scholars highlight that leisure activities also tend to vary throughout the year. Andresen and Malleson (2013) note that there is a straightforward explanation for why this is the case; in colder or rainier climates, it is relatively uncomfortable to be outside and most people conduct their activities inside. When the weather warms and dries, more time is spent outside, particularly for children who are out of school during the summer months. As a consequence, periodic changes in peoples' routine activities have the potential to change the spatial patterns of crime and, thus, police responses to these events.

Alternatively, heat aggression theory offers a more psychological explanation for the increase in crime during certain seasons of the year (Breetzke & Cohn, 2012; Hipp et al., 2004). This theory suggests that hot temperatures, particularly in summer, lead to an increase in frustration and discomfort in individuals and, therefore, increase the likelihood of aggression. Several versions of heat aggression theory exist with most coming to the same theoretical conclusion that as temperature rises so too does the propensity for aggression and subsequent criminal events over long time periods (e.g.,

days, months, seasons) in a linear fashion (Anderson & Bushman, 2002) and a curvilinear fashion (inverted U-Shape) for shorter time periods at the daily level (Cohn & Rotton, 2000). In their social escape and avoidance theory, Cohn and Rotton (2005) argue that the shape of the curve relating temperature to aggression and the strength of that relationship are dependent on a number of factors, including the time of day, the day of the week, the season of the year, the amount of social interaction occurring between people, the type of crime being committed, and even the setting in which the crime occurs.

Despite the presence of support for the temperature-aggression relationship, it is generally considered less flexible for understanding (temporal) crime patterns than routine activity theory. This is primarily because routine activity theory can explain changes in violent and property crime (Andresen & Malleson, 2013; Linning et al., 2017). Moreover, according to Bell (2005), the debate over the temperature-aggression relationship has emphasized three general explanations for the discrepancies present in its own literature: (a) methodological flaws in the data-gathering process and/or analyses of the data; (b) 'noise' in the data in the form of uncontrolled or undetected variables; and (c) restricted range, especially in the form of too few observations at high temperatures.

Given the focus of the current study looks at an example of the use of criminal justice services to respond to a phenomenon that is, for the most part, non-criminal in nature, the relationship between aggression and temperature would be less than ideal for the reasons identified by Bell (2005). Another reason why routine activity theory should be used to explain temporal patterns within police calls-for-service for the MHA is because a long list of existing research has used routine activities theory to explain macro and micro temporal trends in crime. Unfortunately, there has yet to be a study that looks at the temporal patterning of non-criminal events that the police respond to (e.g., false alarms) so these studies offer a useful point of comparison. However, as will be discussed, there are other comparison points from the mental healthcare literature that can be used for indirect comparison. Lastly, because of the greater degree of flexibility with routine activity theory, I am confident that this perspective is more appropriate for studying the temporal nature of mental health related calls for police service. Mental health related calls for police service may be indirectly related to

aggression/temperature, but not necessarily. As such, in order to avoid falsely rejecting or failing to reject the hypotheses routine activity theory is preferred.

It seems fitting at this point to address the fact that I am opting to use a criminological theory to a phenomenon that is not inherently criminal. Instead, the intersection of police services with PwSMI should be seen more as a phenomenon that has been criminalized or that criminal justice stakeholders are used to provide *de facto* mental healthcare to patients, suspects, and offenders at all levels of the CJS. As has been cited in Chapter 2 of this dissertation, though there are opposing arguments on the criminalization hypothesis (Abramson, 1972; Engel & Sliver, 2001), there is undoubtedly the need for police to fulfill the role as a 'gatekeeper' to linking patients to services either through the CJS or mental healthcare system. When appropriate, the delivery of patients to an ED for evaluation is the least likely to be framed as criminalization (Lamb et al., 2002).

Unfortunately, no such theory or foundational lens exists from the epidemiological literature that was specifically designed to explain the temporal nature of mental health crises that police will inevitably respond. There are various models and theories that have been posited to exploring mental health and illness and their relationship to time (broadly speaking), ranging from the biological, psychodynamic, behavioural, cognitive, and social. Aside from crisis theory (Jacobson, 1980; Jacobson, 1965) which is an equilibrium theory that can be used for practitioner or clinical response to improve treatment and intervention to a variety of potential areas, there has yet to be a theory or lens that looks specifically at when crises will likely require emergency mental healthcare. The use of emergency service providers such as the police to act as a conduit to the ED for a mental health assessment is a unique phenomenon that could be attributable to a variety of theoretical causes. Thus, a broad theoretical lens like routine activities theory is arguably the most appropriate theory to test the five aforementioned hypotheses.

4.2.2. Empirical support for the temporal patterns of crime

Though research on the impact of routine activities on crime did not emerge until the 1980s, research on the seasonality of crime dates back to the early nineteenth century in France. Quetelet (1842) found that in France crimes against persons (violent

crimes) reach a maximum during the summer months (June) whereas crimes against property reach a maximum during the winter months (December), citing a lack of basic needs in the winter and problems with reasoning power from the heat and increased interactions with others in the summer. Quetelet's (1842) theory was later supported in various ways by Sutherland (1947) and in the mid-1970s, by Lewis and Alford (1975). One important extension that Lewis and Alford deduced was that the temporal trends under analysis occurred at the same time each year, regardless of latitude and reported temperature. In fact, it is relative changes of temperature that tends to result in people spending more time outside.

Some studies have explicitly considered routine activity theory as an explanation for the seasonality of crime. Field (1992) found that temperature had a positive relationship with violent and property crime types, but there was a statistically insignificant relationship for robbery. These results were attributed to routine activity theory because temperature/aggression theory does not predict an increase in property crime. Overall, if the temperature was one degree above normal, crime was expected to increase by 2%. In an investigation of robbery and homicide in Israel, Landau and Fridman (1993) found support for a seasonal relationship for robbery, but not for homicide. They claimed their results did not imply a deterministic relationship between seasons and crime, but that seasons had an impact on human interactions, some of which were criminal and that this is consistent with routine activity theory. For homicide however, Landau and Fridman (1993) suggested that that it is almost always reported and, thus, present in criminal justice statistics, and that non-homicide victimizations from family or friends are less likely to be reported. Thus, increased routine activities outside the relatively protective environment of the home may simply be leading to an increase in the reporting of violent crimes between strangers and/or not-so-close acquaintances

Routine activity theory finds support in other temporal variations as well. van Koppen and Jansen (1999) analyzed the daily, weekly, and seasonal variations of commercial robbery data in the Netherlands. Commercial robberies were greater in the winter months. With regard to the guardianship component of routine activity theory, there are more dark hours in the day during the winter months and thus offenders are less likely to be observed. Using data from a survey of 576 respondents in Glasgow and Sheffield, Semmens et al. (2002) found that the fear of burglary and vehicle crime both peaked at the end of autumn when nights were longest, whereas mugging and

vandalism did not appear to have any seasonal effect. Once again, this showed that the seasonality effect on crime varies, and not only by crime type and geography.

The literature investigating the relationship between the day of the week and crime, however, is relatively sparse. Generally speaking, criminal activity has been found to be at its peak on the weekend: Friday and Saturday night, in particular. This has been particularly the case in the context of alcohol and violence (A. Newton & Hirschfield, 2009) though unfavourable weather conditions (i.e., rain) may decrease the odds of a crime on the weekend (Tompson & Bowers, 2015). Considering the day of the week in Stockholm, Sweden, two studies have found that both violent and property crimes peak on weekends at the street level and in transit systems (Ceccato & Uittenbogaard, 2014; Uittenbogaard & Ceccato, 2012). And more recently, Andresen and Malleson (2015) found that the patterns across the week varied by crime type. For example, they found that assault, robbery, sexual assault, and theft of vehicle peaked on the weekend (usually Saturday) but other property crimes peaked during the week.

4.2.3. Empirical support for temporal patterning associated with mental illness and police response

Unfortunately, much like the criminological literature, the temporal patterns of mental illness are often mixed. For example, affective disorders have been shown to have temporal patterns. Seasonal affective disorder, for example, has been shown to have an association with time (i.e., winter months), location (i.e., jurisdictions with more northern latitudes), and have prevalence rates anywhere from 0% to 9.7% (Magnusson, 2000). Other mental illnesses are less closely linked with macro and micro measures of time because there is no known association, or that the effect is confounded by other factors such as gender/sex of the sample, and a wide variety of other climatic, biological, and social variables. For example, temporal trends in hospitalizations—an area of interest for the current study—have also been studied in a larger grouping of affective disorders (i.e., bipolar, depression). Though statistical findings have been shown, the results are mixed depending on the age and sex of a patient and whether they were in a state of mania (spring/summer), mixed episode (late spring and winter), or depression at the time of hospitalization (Dominiak, Swiecicki, & Rybakowski, 2015). In other studies, scholars have found no seasonal pattern of manic depressive illness (Whitney, Sharma, & Kueneman, 1999).

Focusing on the temporal trends associated with police responses to PwSMI with specific illnesses may provide useful insight into how calls-for-service relate to time. However, because this diagnostic information is not well-captured by police data, I focus on what is likely to be available in police databases. More specifically, specific crises that are associated with mental illness allow scholars to narrow down on specific events that can be cross-referenced with existing datasets. Two areas of mental health crises are of particular use when considering the element of time: suicide and transfers for emergency mental healthcare. On the one hand, suicide and suicide attempts have been shown to have seasonal cycles that have short term fluctuations in monthly or daily data along with minor circannual effects on holidays or birthdays (Ajdacic-Gross, Bopp, Ring, Gutzwiller, & Rossler, 2010). Interestingly, the association between temperature and suicide is one of the most robust relationships (H. Lee et al., 2006) and over the approximately the past two decades (1993-2008), ED visits for attempted suicide and self-inflicted injury have increased for all major demographic groups (Ting, Sullivan, Boudreaux, Miller, & Camargo, 2012). However, given the vast array of other factors at play, there is often a lack of hard evidence that shows mixed findings for cyclical or temporal trending in suicides at the daily or micro temporal level (Jessen, Jensen, & Steffensen, 1998; Kim, Kim, & Kim, 2011; Van Houwelingen & Beersma, 2001). Though the temporal trends of suicide are useful at framing a type of mental health crisis, SAD and other specific mental illnesses that can be temporally modelled, suicide and suicide attempts can reflect as little as less than 1% of the police calls-for-service with even fewer being attributable to a subject with a prior mental illness (Lord, 2010). Furthermore, given the focus of the current chapter, a nexus point of particular interest is the intersection between PwSMI, the police and the ED.

According to Klein (2010: 206), since the 1960s, researchers have found that “25-40% of all psychiatric admissions to public hospitals are the result of police transports.” Some of these presentations to the ED will be related to suicide (Zeppegno et al., 2015), but generally speaking, patients will be referred to the ED when they have multiple stressors to their mental health such as aggression/violence, substance use, depression, anxiety, and/or hallucinations (Klein, 2010). Research into understanding the relationship between the ED, PwSMI and the involvement of police services tends to focus on descriptive elements about the patient, police procedure, diagnoses and disposition (Broussard, McGriff, Neubert, D’Orio, & Compton, 2010; McNiel, Hatcher,

Zeiner, Wolfe, & Myers, 1991; Redondo & Currier, 2003; Strauss et al., 2005). In terms of temporal research, some studies have included analysis that pertains to ED wait times (Way, Evans, & Banks, 1993) and developed programs and policies to reduce the amount of time police and patients spend in the ED (Pizzingrilli et al., 2015; Smart, Pollard, & Walpole, 1999). However, there are only a handful of studies that have looked at when mental health crises that require ED use will occur.

Using pediatric data, scholars have found that over a four year period, "the number of children and youth presenting to the ED with a concern related to mental health increased by 4%" (A. S. Newton et al., 2009: 449). It is important to note that how patients were delivered to the ED in Newton et al., (2009) was not captured though non-temporally-based comparative research between youth referred to emergency services through police custody versus other sources does exist in the literature (Evans & Boothroyd, 2002). Similarly, regardless of how a patient arrived at the ED, Whitney and colleagues (1999) found significantly more admissions to hospitals in Canada in the summer months compared to the winter months. When examining mental health disorders separately though, Whitney did not find a significant result for each season, but did find that when broken down by month, mania was significantly more common to admit to hospitals in June than any other month. At the micro temporal level, there is slightly more existing evidence of patterning. For example, a study comparing welfare payments and S.28 MHA apprehensions (one of four types of enforcement that fall under the MHA), by the police in British Columbia, Picket et al. (2015) found that the number of mental health apprehensions significantly increased the week after welfare payments as opposed to weeks without those payments. Returning to pediatric visits to the ED for mental health reasons, there is evidence to suggest that the peak times for these presentations are evenings and in terms of the day of week during the work week is more common for mood, behavioural and stress related disorders whereas on the weekends substance use and self-harming behaviour were more common (Ali, Rosychuk, Dong, McGrath, & Newton, 2012).

To date, only one study has looked at patterns of patients who were transferred to the ED by police services. Much like other descriptive studies, Lee et al., (2008) highlighted the descriptive information about the population captured by police (e.g., patients were likely to have a history of previous contact with mental health services, most were unemployed males with substance use problems who were admitted for

psychosis) but extended these findings to not only consider involuntary apprehensions but also warrants issued by a medical practitioner and the court system that requested the police apprehend a patient because they were in violation of some condition. With roughly 20% of all mental health presentations coming via police custody and 56% of these resulting in hospital admission (S. Lee et al., 2008), additional research is needed to identify any trends within this subset of all ED presentations. According to Lee (2006), 75% of patients brought to the ED occur after hours, with 25% during business hours or between 8:30am and 5:00pm Monday to Friday and excluding public holidays. Given that the bulk of mental health services are available during office hours yet most patients brought in by the police will come after hours, these findings highlight the importance of matching service to times when there is a demand for said services.

4.2.4. Aim of the chapter

It appears as though in the mental health temporal literature, mental health issues arise in the spring and autumn, (not just summer like crime) and around particular temporal events (e.g., social assistance checks). However, this depends on type of mental illness and how these peaks are captured. Because the current study uses police calls-for-service, it is possible that temporal and seasonal trends will emerge. Rather than using the recent research (S. Lee, 2006; S. Lee et al., 2008; Pickett et al., 2015), I hypothesize that the temporal—macro and micro—follow the traditional trends found in crime data as per routine activities. Thus, this chapter aims to explore the temporal variation of MHA calls-for-service ranging from the macro temporal (i.e., seasonal and yearly levels) to more specific micro temporal (i.e., weekly, hourly) points in time.

4.3. Methodology

The data representing mental health related calls for police service, specifically police calls-for-service that invoke the MHA, in the analyses that follow occurred with the City of Surrey, British Columbia, Canada, January 1, 2009 to December 31, 2015. Surrey is primarily patrolled by the Surrey Detachment (police department) of the RCMP. However, also included in the data used in the analyses below are those calls that occurred in Surrey but were responded to by the Transit Police Service on the rapid transit system that begins in the North West corner and travels through the business

district of the city. The total sample of MHA calls for police service for this time period is 22,425, with the number of annual calls almost doubling from 2009 (2154) to 2015 (4192).

The City of Surrey is a fast-growing municipality in the Metro Vancouver region, growing from a population of 453,000 (2009) to 527,000 (2015), a 16% growth in population over the study period. As the second largest municipality in Metro Vancouver, Surrey is home to a regional hospital, post-secondary institutions, a central business district, and a light rail rapid transit system. The RCMP in Surrey has an authorized strength of 673 members, plus any of the Transit Police officers who are present because of the light rail rapid transit system.

Three sets of analyses are undertaken to answer this study's hypotheses. The first provides six graphical representations of the distribution of the calls-for-service over the three macro level and three micro level units of time. The second test aims to understand the differences in counts of events for each unit of time. Because the data is count-based, a traditional one-way ANOVA would not be appropriate as the assumption of variance of homogeneity cannot be met. Instead, I used the Kruskal-Wallis H-test, an omnibus test which does not require the residuals to be normally disturbed. Furthermore, Kruskal-Wallis is an omnibus test that uses rank-based non-parametric testing to analyse statistical differences from two or more independent groups. In the case of the current study, there will be six Kruskal-Wallis tests to be run for groups of 24 for hours, 31 for days of the month, 7 for days of the week, 12 for months of the year, 4 for seasons, and 7 for the total number of years. All data for the Kruskal-Wallis tests was aggregated to the hourly level. That is, counts were calculated for 17,670 of the potential 61,320 hours that existed between Jan 1, 2009 at 12:01AM to 11:59PM December 31, 2015.

The third set of analyses uses a negative binomial model to the daily count data to assess the impact of the seasons, months, days of the week along with the impact of holidays and other environmental factors--the average temperature, precipitation, and snow—through data provided by Environment and Natural Resources Canada. Table 4.1 provides descriptive statistics for MHA calls for police service, average temperature, precipitation and snow.

Table 4.1 Descriptive statistics, dependent and independent variables

	Mean (daily)	Standard deviation	Minimum	Maximum
MHA calls	8.8	3.75	0	24
Average temperature	10.6	5.89	-6.4	28.4
Precipitation	3.1	6.14	0	55.8
Snow	0.1	0.72	0	16

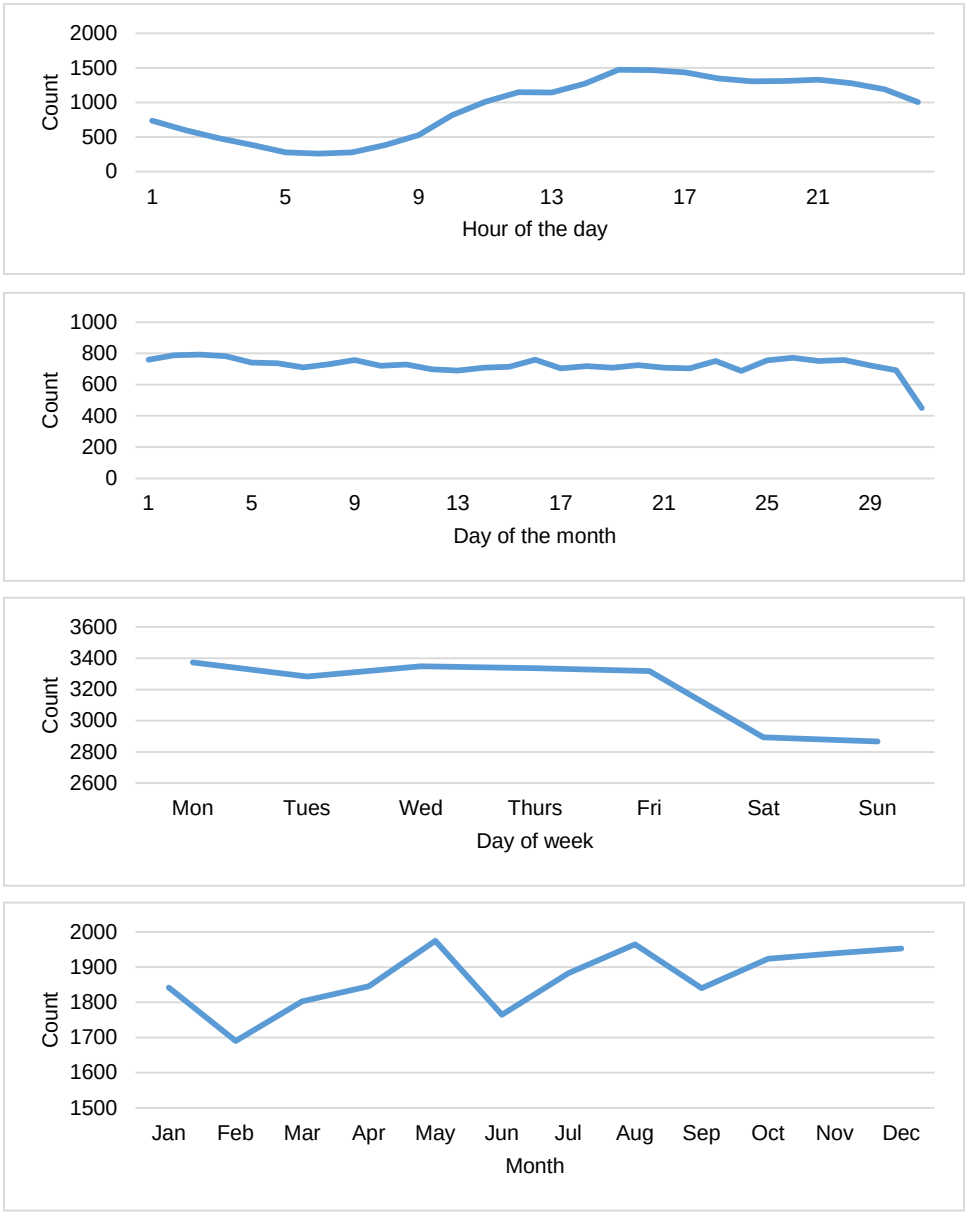
In the negative binomial model, I report the full model specification as well as the final model that only includes the remaining statistically significant variables after following a general-to-specific testing methodology: removing statistically insignificant variables both independently and jointly, undertaking likelihood ratio tests to ensure relevant variables were not removed because of multicollinearity. For these models, I pooled together the yearly data as well as aggregated to the daily level. Thus, statistical inferences to time could only be made at the day of the week, monthly, seasonal, and yearly levels.

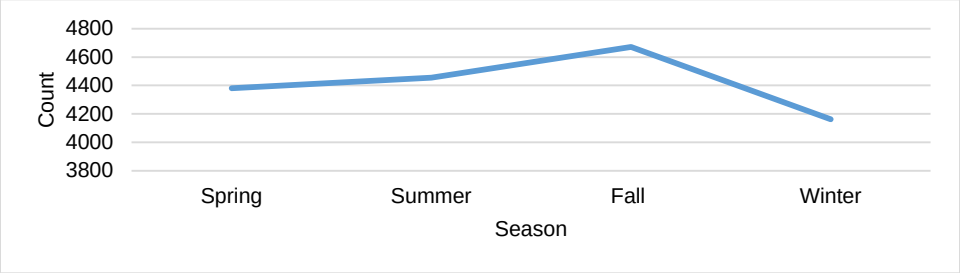
4.4. Results

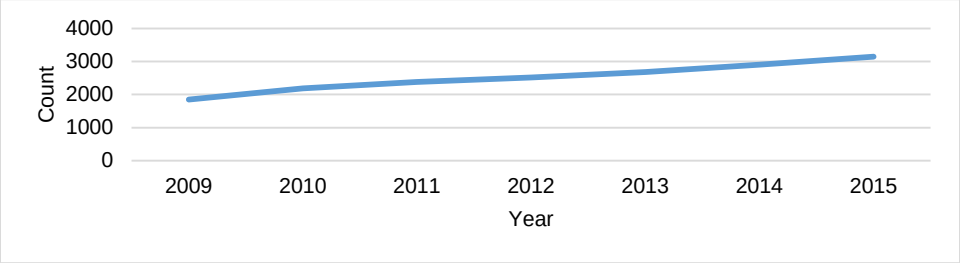
For visualization purposes, the counts for all six units of time are shown in Table 4.2. What should be immediately obvious is that the unit of time for analysis can show distinct temporal patterns while other units of time appear to be consistent over time or random in nature. For the patterned data, the time of day appears to begin increasing around 8am and peak between 3 and 6 pm. Day of the week data shows a consistent number of MHA calls occurring during the week with substantial drop over the weekend. Seasonal patterns were less salient with a moderately higher amount occurring in summer and fall months in comparison to the spring and winter seasons. Yearly patterns clearly show that there is an increase of MHA events occurring over time with an average yearly increase of 8.5%/year with an increase range from as low as 5.2% from 2011-2012 to as high as 15.75% from 2009-2010. Population growth in Surrey over this same time period averaged 2%, so there has been a clear net growth in MHA calls for police service. The day of the month patterns were essentially flat which contradicts previous research in this area (Pickett et al., 2015) which suggested that end of the month to coincide with the distribution of social assistance funds. The results from this paper suggest the counts by day of the month are relatively constant over the month. The monthly of the year count data appears to be the most volatile data of all units of time. The hypothesized ‘peak’ of calls-for-service in the summer months appears to rise

and fall between June and September. The Kruskal-Wallis test statistically confirmed some of the temporal patterns in the data while also highlighting a lack of statically significant differences between groups within times. For hourly counts, χ^2 (23) = 374.70, $p < 0.05$, weekly counts χ^2 (6) = 30.50, $p < 0.05$, and yearly counts χ^2 (6) = 131.78, $p < 0.05$ all identified statistical differences between units of time within each measure. Day of the month, month of the year, and season were all insignificant.

Table 4.2. Counts of MHA calls by hour of day, day of month, day of week, month, season, and year







In order to further investigate these (lack of) temporal patterns, I use negative binomial regression. As shown in Table 4.1, the daily counts of MHA calls for police service range from 0 to 24, with an average of almost 9. It is also important to note that the weather (temperature, precipitation, and snow) is temperate in Surrey with not a lot of variation throughout the year compared to some places investigated in previous research. The results from the negative binomial regressions (the full and final models are shown) are shown in Table 4.3. It should be clear from the results, that the general-to-specific testing methodology did not make any notable qualitative changes to the statistically significant results.

In the full model, all variables included in the regression, 5 variables are statistically significant at the 5% level: year, average temperature, precipitation, Saturday, and Sunday. There are also two more variables that are marginally significant at the 10% level: holiday and November. Year, average temperature, precipitation, and November all have positive statistical relationships with MHA calls for police service, whereas Saturday, Sunday, and holidays have negative relationships with MHA calls for police service. The results of the final model do change slightly, but the general interpretations are similar. Year, average temperature, precipitation, November, and December all have positive relationships with MHA calls for police service, whereas Saturday, Sunday, and June have negative relationships with MHA calls for police service.

Table 4.3. Negative binomial regression results, full and final models

	Full model				Final model			
	Coefficient	Standard error	RR	p-value	Coefficient	Standard error	RR	p-value
Year	0.098	0.004	1.103	< 0.01	0.098	0.004	1.103	< 0.01
Average temperature	0.006	0.003	1.006	0.04	0.004	0.001	1.004	< 0.00
Precipitation	0.003	0.001	1.003	0.04	0.003	0.001	1.003	0.03
Snow	-0.011	0.012	0.989	0.37				
Tuesday	-0.033	0.027	0.967	0.22				
Wednesday	-0.013	0.027	0.987	0.63				
Thursday	-0.022	0.027	0.978	0.42				
Friday	-0.023	0.027	0.977	0.39				
Saturday	-0.162	0.028	0.850	< 0.01	-0.143	0.022	0.867	< 0.01
Sunday	-0.168	0.028	0.846	< 0.01	-0.148	0.022	0.863	< 0.01
Holiday	-0.070	0.042	0.933	0.10				
February	0.002	0.037	1.002	0.96				
March	-0.042	0.037	0.959	0.26				
April	0.005	0.039	1.005	0.89				
May	0.019	0.044	1.019	0.68				
June	-0.083	0.051	0.921	0.11	-0.056	0.028	0.946	0.05
July	-0.063	0.056	0.939	0.26				
August	-0.022	0.056	0.979	0.70				
September	-0.039	0.049	0.962	0.43				
October	-0.003	0.041	0.997	0.95				
November	0.066	0.036	1.069	0.07	0.073	0.028	1.075	0.01
December	0.054	0.036	1.056	0.13	0.055	0.029	1.056	0.06
2*Log-likelihood	-13146.35				-13158.38			

4.5. Discussion and conclusion

Results from this study highlight the clustered nature of MHA calls for certain units of time. At the micro temporal level, these calls appear to peak mid-day and mid-week. Such a findings is contradictory to previous criminological research that suggest crime (violent) peaks late in the evening and on weekends (Andresen & Malleson, 2015; Ceccato & Uittenbogaard, 2014; Uittenbogaard & Ceccato, 2012). Using the existing ED research, the hourly findings from this study are comparable to previous research. For example, Lee (2006) suggest that 75% of patients are brought to the ED after regular business hours and during the week. The findings from this paper would indicate that a

sizable proportion of patients arrive to the ED during the latter half of the business day and these counts continue into the evening only to start to decrease at around 10 PM.

Furthermore, the results from the Kruskal-Wallis above gave an initial indication that seasonal and monthly patterns were not present but that there was an impact of the day of the week. The negative binomial regression results, however, show that there is a monthly pattern, in addition to the day of the week pattern (i.e., less likely to have a MHA call on the weekend), present in the data. This shows the importance of multiple methods of analysis, particularly because using seasonal and monthly counts that will have much lower sample sizes making statistical significance more difficult to identify. In addition to the monthly impact of November (plus June and December in the final model), a seasonal variable for Fall remained statistically significant in the final model, clearly being driven by the November and December result—most of December is technically in the Fall season.

Turning to the interpretations of the estimated parameters, the discussion will focus on the relative risk ratios for ease of interpretation. The relative risk ratio for year shows a 10.3% increase for every year. This coincides well with 8.4% growth year-to-year identified above in the raw data. Average temperature and precipitation, though statistically significant, have low magnitude relative risk ratios. As such, these variables cannot be expected to have a large magnitude impact on MHA calls for police service.

Compared to the base month of January, June has a 5.4% decrease in relative risk. On average this would lead to an increase of 0.5 MHA calls for police service during June. As such, this is not a large impact. A similar result is present for November and December, 7.5 and 5.6% increases in relative risk, respectively. This low magnitude impact is probably why the Kruskal-Wallis analyses for monthly and seasonal data were unable to identify statistically significant differences that data aggregated to daily level in the negative binomial results were able to identify.

The day of the week results have the largest effect sizes of all statistically significant variables in both the full and final models. Saturday and Sunday have 13.3 and 13.7% decreases in relative risk, respectively, compared to the based day of Monday for MHA calls for police service. This translates into one less call, over the average, for each weekend day. Though this may not sound like a significant impact on

police resources, one extra MHA call for police service could take hours between the time necessary to apprehend the individual either by means of a warrant or involuntary arrest, take them to a designated facility/hospital, and have them assessed by a medical doctor and admitted to the facility.

As such, in terms of practical implications, the findings from this paper may allow police officers responding to MHA calls for police service some time for mental health prevention activities if they are not over-taxed on a weekday and have the same number of officers on the weekend. However, it should be clear that such a difference should not be considered a large enough impact to alter police resources dedicated to mental health over the weekend. Incorporating the Kruskal-Wallis at the hourly level findings would suggest that police officers working evening shifts may end up spending more time in hospitals with PwSMI. Such a finding could result in day-shift police officers needing to work overtime (particularly when the patient is violent) to cover the member who are removed from patrol duty while awaiting the medical processing of the patient. Additional practical implications could be applied to the local health authority that operates the ED in Surrey. The hourly and weekly trends may not be salient to hospital administrators but having this information may assist in staffing and other administrative planning.

From a more theoretical perspective, these patterns are particularly interesting when compared to the temporal patterns that are generally found in (violent) crime data. Though there has been a fair bit of inconsistency in the temporal crime pattern literature, if any pattern is present it is an increase in criminal events during the summer and on the weekend. MHA calls for police service have an opposite pattern: more calls in the fall season and fewer calls on the weekend. Though the effect is not large, it is statistically significant and a meaningful magnitude for police workload, though not likely scheduling. In contrast, the seasonal changes in violent crime has been found to be as much as 40% greater in the warmer months than the colder months (Andresen & Malleson, 2013; Harries et al., 1984).

Though these analyses are instructive, they are not without their limitations. I only considered the impact on MHA calls for police service, so I do not consider the impact on police services from dealing with PwSMI that do not involve the MHA , or the other calls for police service that involve these individuals. Previous research would

suggest that roughly 56.6% of police calls with PwSMI are associated with the MHA (Vaughan et al., 2016). Additionally, the data for this study is from one municipality in a large metropolitan area. Replication in other similar areas (similar in terms of size and diversity) is necessary as well as other contexts.

Directions for future research first involve the limitations outlined above. An analysis of actual police resources for this population is in order. Such an analysis, however, must go beyond just identifying the change in the number of MHA calls for police service. The time necessary to address these calls for police service relative to the other types of calls for police service that this population generates needs to be identified. Such a police resourcing study should also be undertaken in a number of other similar, and different, contexts for the purposes of replication. Another area for future research would be to combine the temporal modelling of when these events occur at the micro/macro temporal level with how long these events take to process (see: Redondo & Currier, 2003). It would be useful for police and ED administrators to know that for example, if the peak times for MHA calls are mid-week/mid-day (along with some seasonal patterning), do the processing of these calls take longer than the off-times or times where the processing in the ED should not theoretically be impacted by other MHA patients? Lastly, it would be useful to study the ED admissions data in this jurisdiction to see if the temporal trends parallel with patients who present to the ED without police assistance. Lee et al., (2008) highlight numerous difference between PwSMI who arrive to the ED via police custody and those who do not.

Overall, I have shown that the temporal patterns of Mental Health MHA calls for police service are different from crime-related calls for police service. Based on the data, MHA calls for police service account for approximately 5% of police calls-for-service, whereas crime-related calls account for 20-30% of police calls-for-service. At best, investigating these temporal patterns only accounts for one-third of police call activity. More research is necessary along these lines to identify temporal (and spatial) patterns for these other call-related activities of the police. These other activities have been found to be related to crime prevention related activities (Her Majesty's Inspectorate of Constabulary, 2012) and, therefore, important activities for police services. In order to better understand the demand for these services their patterns need to be analyzed as well.

Chapter 5.

Conclusion

5.1. Introduction

For decades, scholars have noted that health and human behaviour do not occur within a vacuum (Polgar, 1962). Among the existing static factors, the connections between health and behaviour are connected through a complex series of processes, such as the environmental context and other social influences (Baranowski, Perry, & Parcel, 2002). In the case of the current dissertation, the focus is on the PwSMI whose behaviour (which may or may not be criminal) results in contact with the CJS. The proportion of the entire population of PwSMI that have some interaction with the CJS is unknown, but what has been noted for decades is that there is a subgroup of this population that is present within the various layers of the CJS (Abramson, 1972) along with an even smaller cohort that habitually cycles in and out of the system (Akins et al., 2016). Conceptual frameworks, such as the Sequential Intercept Model by Munetz and Griffin (2006), approach this phenomenon by systematically modelling how communities can move away from the existing policies and practices that 'silo' resources as either health or criminal-justice-related behaviour to a more collaborative approach that effectively targets patients and links them to treatment while also diverting them away from the CJS. Furthermore, Munetz & Griffin (2006) suggest that pre-arrest settings are the most effective 'points of interception' or opportunity to intervene along the CJS continuum to prevent a patient from penetrating deeper into the system, where patients are more likely to be 'criminalized' through court proceedings and housing in institutional settings. Examples of pre-arrest settings include the civic or public mental-health-care systems as well as events that involve law enforcement and other emergency services. As such, the overall aim of this dissertation was to understand the interconnectedness of mental health and behaviour at the point of police intersection.

Using a qualitative lens, the first research chapter in this dissertation provides a foundational overview of police-PwSMI interactions that occur within the Fraser Health Authority catchment area. Guiding the semi-structured interviews and focus groups is the existing theory that indicates that the resulting data that is generated in police RMS

is likely to have some degree of variability both between and within police agencies (Livingston, 2016). Four factors were posited to impact the data and thus the nature and quality of police interactions with PwSMI: the quality and quantity of support services in the community, developmental or historical factors, the definitions police services used to identify PwSMI, and the overarching policy that directs police decision making and the availability of programming resources. The results indicate that police work with PwSMI tends to be heavily focused on risk assessments that are based on the behavioural characteristics of the patient at the time of the event and interactions they may have had with police in the past. Similar to the findings from previous research (Akins et al., 2016), extended discussions emerged around the subgroup of PwSMI with habitual police contact. Many of these patients were likely to be aligned with an ACT team or some other mental-health outreach team and yet their contacts with front-line police officers may still persist. Repeat contacts aside, the existing policy for applying the appropriate provisions of the MHA generates the majority of police work in this domain. In addition to warrants for apprehension, S.28 MHA apprehensions were discussed at length and can result in the consumption of a copious amount of police resources, especially the potentially lengthy wait times at the ED. Further complicating this was the finding that most policing communities within the Fraser Health Authority had some form of deficit in mental-health services. Though this deficit was not a direct cause for police assistance, it was hypothesized to have an impact in cases that were not assessed to be high-risk. A lack of - or a shortfall of -community services was a major discussion point and, when services were available, police officers may not have been privy to this information. In some instances, the distance between the call-for-service and the support service may dictate police decision-making practices. Informal solutions in these instances can be vital for the patient as timely referrals to supportive community groups and programs with available bed space may drastically reduce the frequency of future police contacts.

The temporal and spatial trends highlighted in the qualitative data in chapter 2 emerged as a potential avenue for additional examination. In chapter 3, I elected to focus on the spatial aspect of police calls-for-service with EDP, a proxy for PwSMI that is contained within the police data RMS. An additional layer that was briefly discussed in chapter 2 but did not emerge as a major theme was the difference between males and females in the nature and frequency of their contacts with police. Various examples of police interactions with male and female patients within the local environment were

provided by participants but the larger aggregate trends about males and females in general and the potential association with the environment were not discussed. Unfortunately, because the issue of gender differences among PwSMI who contact police services is very specialized, the existing policing research is correspondingly limited in its nature and extent. Existing recidivism (Crocker et al., 2009) and neighbourhood studies (Krishan et al., 2014) provided a foundational base from a CJS perspective, while previous research on gender-related factors associated with mental illness, finalized the foundation needed to study the various spatial trends that exist in all police calls-for-service with PwSMI. As evidenced by the results from this chapter, the spatial clustering of calls-for-service are different between call type and gender. Microspatial results also indicate that, at the aggregate level, the routine activities for females result in more calls-for-service occurring in residential settings, while men are more likely to require police assistance within a commercial setting. The concept of hot-spots policing is a well-known area of scholarship for criminal events (Braga et al., 2014): however, considering that the majority of EDP-events in this chapter were generated by the provisions of the MHA, the results from this study provide not only an evidence-base for police services in Surrey, but also a window into the spatial distribution of mental illness of males and females in the community. As has been found in other studies, hot-spot policing initiatives targeting PwSMI can be used as a proactive measure to interact with patients with respect to their mental-health problems, as well as other problems in their community, and to provide services to those in need (C. White & Weisburd, 2017). As such, there are clear policy implications for police services and for local health-care and social workers who are arguably the more appropriate groups of service providers for assisting the population of PwSMI in Surrey.

The third research study in this dissertation explored the intersection between PwSMI and police services and time. A sizable area of discussion in chapter 2 focuses on ‘heavy user’ patients who repeatedly use police services, with many of these patients falling under the provisions of the MHA. In addition to a dearth of literature on the temporal patterning of crime (Andresen & Malleson, 2015), researchers have also studied temporal patterns (often in the context of recidivism), focusing on various subgroups of the population (S. Lee et al., 2008). One shortcoming of the existing literature, and a theme that was not extensively discussed in chapter 2 was whether or not there was a temporal pattern with respect to police calls-for-service. Some of the

narrative in chapter 2 touched on the belief that the high volume of calls had increased over time, but this was often anecdotal and usually focused on longitudinal trends. Using the routine activities theory as a foundation, the aim of chapter 4 was to determine what, if any, temporal trends existed in MHA calls-for-service. Similar to chapter 3, I considered macro and micro measures - but for chapter 4, the focus was on macro and micro measures of time. The spectrum of temporal considerations ranged from the yearly and seasonal level to variables as specific as the hour of the day. Results from this study provided empirical verification that calls-for-service with PwSMI have been increasing: however, these increases coincide with Surrey's rapid population growth that has occurred within the past decade. Within the seasons and months of each year, there were some statistically significant findings, though they were not consistent or clear-cut. The micro temporal results, however, showed the most significant differentiation between periods, with a sizable volume of MHA calls occurring midday and midweek. Similar to the potential implications from chapter 3, the temporal chapter in this dissertation may be used to help both police and health-care service providers more accurately predict when resources should be deployed to the community. For example, additional psychiatric ED staff during the middle portion of the day/week may help alleviate potential bottlenecks at the point of triage.

5.2. Limitations and future research

Although the various methodological limitations for each chapter have been previously listed, it is certainly warranted to address more of the larger/conceptual limitations of this dissertation. First, the data used in this study have some inherent limitations. As with any qualitative study, the data used in chapter 2, may not be generalizable to other contexts. All efforts were made to get a representative sample of police officers with ample experience working with PwSMI in their community. However, given the legislative make-up of the various health authorities that operate within a small geographic area of British Columbia and the fact that the rate of MHA calls-for-service are roughly 50% to the Vancouver Police Department (Szkopek-Szkopowski et al., 2013), a large metropolitan city less than 30 kilometers west of Surrey, the nature of police work in Vancouver is likely to have some similarities as well as some relevant differences in terms of the patients, community services, and available police resources. Nevertheless, because the decision-making patterns for high-risk patients is provincially

(the MHA) and federally (*The Criminal Code of Canada*) mandated, it is likely safe to assume that, when a police officer determines that a patient is in crisis and is a danger to themselves or others because of an underlying mental illness, both police officers in Vancouver and Surrey would transport the patient to the ED under the authority of S.28 of the MHA. Extending these findings to other non-Canadian contexts would need to have an important caveat added as much of how police respond to PwSMI is based on existing legislation.

As was highlighted throughout this dissertation, some of the limitations surrounding the event data were identified qualitatively by participants in chapter 2. Naturally, these limitations transfer to the police incident data found in chapters 3 and 4. When the goal was to study the population of PwSMI that interact with the police, there is the potential that other interactions exist that were not identified in the fixed RMS fields of MHA or EDP. For example, the gray area and calls-for-service that were rated low on the risk spectrum will not be classified as MHA and may not be captured as EDP as well. A potential solution to capture more PwSMI who are contained in the RMS is to explore other areas of the database where this information is likely to be found. One method that has promise is additional 'big data' qualitative text analysis of the synopses and other narratives that police officers use to record the circumstances surrounding police events. This area of research known as 'natural language processing,' refers to a range of computational techniques used for analyzing text-data on various levels for the purpose of achieving human-like language processing in order to acquire the capacity to improve or understand a range of tasks or applications (Liddy, 1998). This area of computational research has been shown to be exceptionally powerful within the field of emergency medicine (Lucini et al., 2017) but within the policing literature this methodological approach is still in its infancy (Chau et al., 2002). It seems only natural that potential research in the future would use these techniques to explore the intersection of PwSMI and other vulnerable populations with police services and the CJS more broadly.

Another area of potentially valuable research would be to extend the results and techniques used in this dissertation to include other sources of information which will be theoretically linked to police calls-for-service with PwSMI. For example, at the spatial level, the inclusion of place-based risk factors have been studied where crime occurs in a given jurisdiction (Drawve & Barnum, 2017). Unfortunately, the use of 'place attractors' to describe patterns in non-criminal police events involving PwSMI is limited (Vaughan et

al., 2016). Including place attractors in future geospatial research would enable police services to potentially apply resources more effectively not only to macro and microspatial locations but to identify and target individual features of a given dissemination area or street. Other valuable sources of information in this area of research would be to look at the spectrum of contacts PwSMI have with other service providers. For example, linking patient data from the ED and other medical sources with police records could be useful for validating subject identifiers like 'EDP' with medical-assessment data, as well as identifying patients who had no contact with police but still went to the ED for mental-healthcare. This approach has been used in previous retrospective research designs (Hartford et al., 2005), but has yet to be attempted at the population level and for extended durations of time.

5.3. Concluding remarks

The results from this dissertation provide a 'snapshot' into the population trends of PwSMI who interact with police over time and space. These findings should not only be seen as pragmatic and important to the RCMP and the British Columbia Transit Police Service, but also should be seen as useful to the primary governing healthcare service provider—the Fraser Health Authority—as well as the other health authorities that provide additional service in the area. For example, the spatial trends may be considered—at the very least—as indirect indicators of where mental-health crises will take place, the nature of the event, how concentrated these events will be, and the different spatial patterns between males and females that also exist. In addition, identifying temporal trends highlighting when a mental-health crisis is likely to occur may be particularly useful for informing service providers as to the times when they are likely to have high or low workloads.

When the requisite data are available, researchers should make an effort to account for the effect of time and space on the development of human behaviour, as these characteristics are associated with and impact routine activities. By neglecting the consideration of time and space in the explanation of social phenomena, the subsequent decisions made by researchers and policy makers overlook these factors and, therefore, the results of a study, policy, program, or piece of legislation may be misrepresented or miscalculated. For better or worse, the current mental-health policy approaches in British Columbia specifically, and around the World more generally, tend to put some of the

responsibility for assisting PwSMI to obtain access to services onto the daily operations of police services. Though they are an important group, ‘heavy users’ are not the only patients who will interact with police and the healthcare system. Broadening the policy response to include a larger cohort, while also being mindful not to unnecessarily criminalize patients, will be a significantly challenging and complex task. However, such an approach is likely to be necessary to ensure that the vital services that PwSMI need are effectively enhancing their mental well-being while slowing and perhaps reducing the growing trend of increasing call volume to which the police respond.

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Appendix A.

Semi-structured interview guide

Role Characteristics

- What is your role within your police department?
- How long have you been; in this role as a police officer?

General Data Collection/Storage Procedures

- How do you record information?
- Where is information recorded?
- What basic information is collected about patrol activities/interactions?
- Who inputs information into departmental databases?
- Who has access to this information?
- What information is generally omitted?
- What challenges do you face in collecting/recording of information for EDP? For MHA? For PwSMI?
- Are MHA apprehensions and non MHA cases recorded in the same way?

Interactions with EDP / Decision making

- How often do you come across a case that involves an emotionally disturbed person?
    - Common or rare?
- How do you determine if someone has mental health needs?
    - Do you notice the difference in individuals whose behaviour is primarily influenced by drugs? If so, how does this influence your decision making?
- What factors do you take into consideration when deciding whether someone falls under the MHA?
- Once you have identified a mental health concern, what do you usually do?
    - Procedure always the same?
    - What circumstances lead to different outcomes?
- Are all referrals you make to emergency psychiatric care under the MHA?
    - If not, how do you decide which to place under the MHA and which not?
- What is your greatest challenge in regards to people with mental ill health?
- How do you make decisions about use-of-force with EDP?

Client History

- What is the extent of your knowledge of EDP that you come into contact with?
    - Medical history? Personal history? Offence history?
- Do you know if someone has a previous MHA apprehension?
    - If so, how?
- Do you have access to the information you need?
    - If not, what information would you need?
- How does knowledge (or lack of knowledge) affect your role?

Relationship to Healthcare

- What is your relationship with the local hospitals?
- What challenges do you face when referring EDP to emergency healthcare services?

Repeat Customers

- Do you have many repeat clients?
- What type of characteristics have you noticed of your repeat clients?
- What are the most common needs of your repeat clients?
- What improvements do you think could be made to reduce the number of repeat clients?

Trends

- Have you noticed any trends in relation to EDP or MHA patients you are in contact with?